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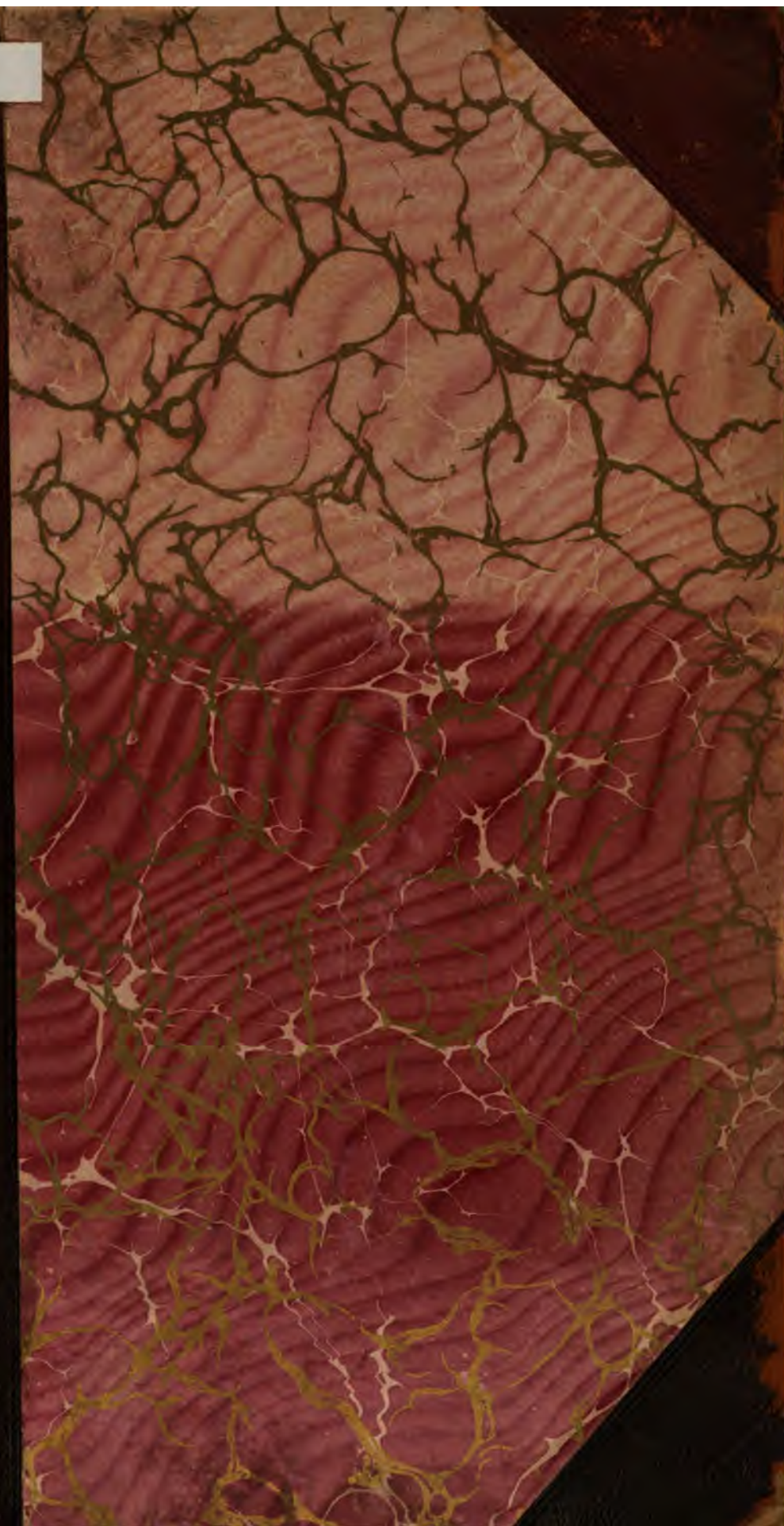
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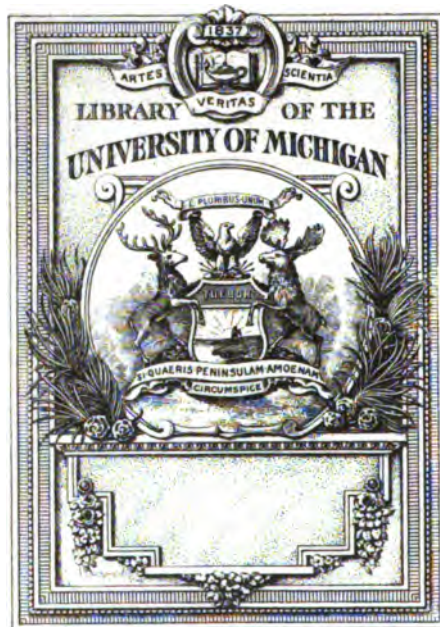
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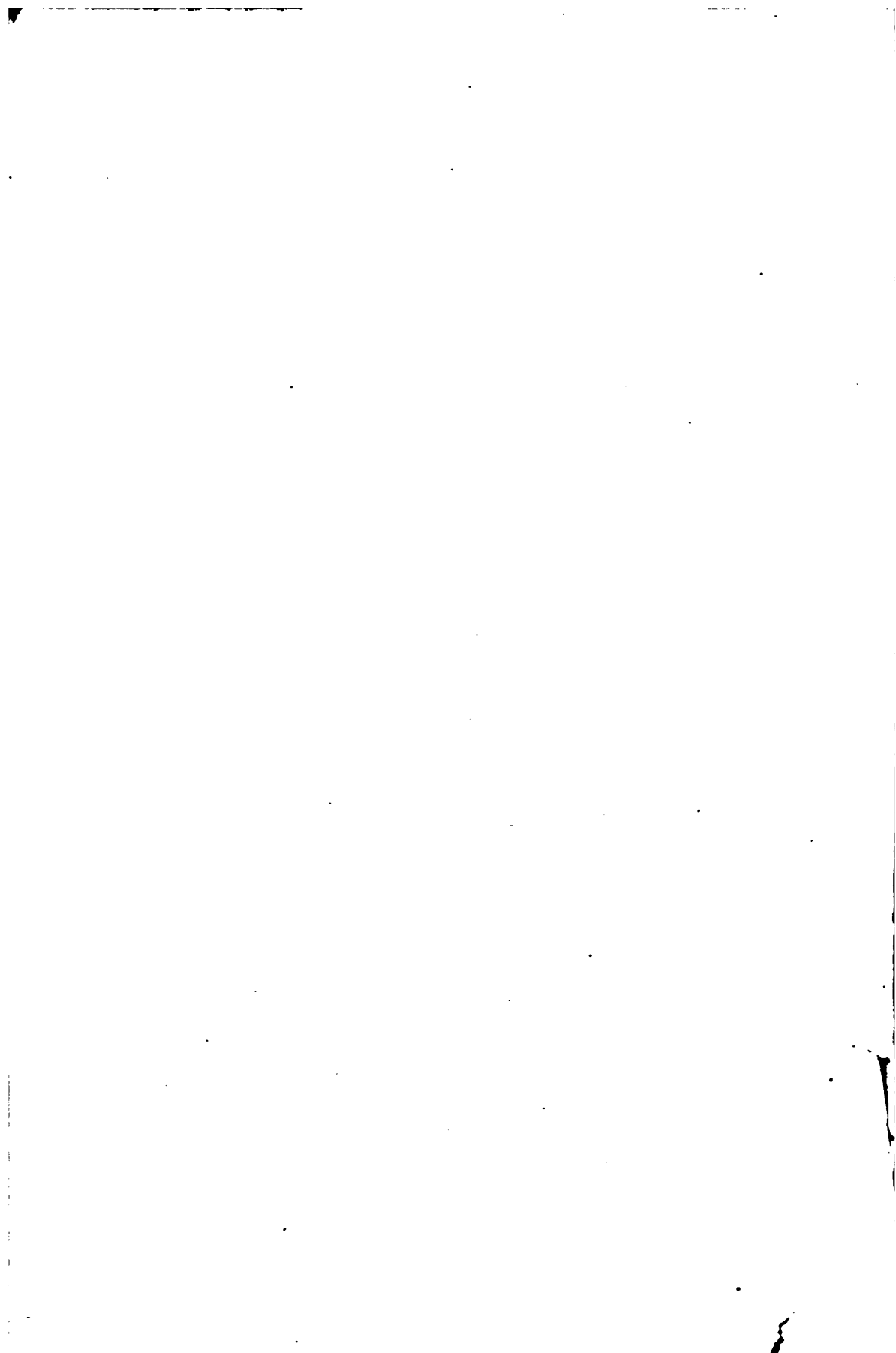
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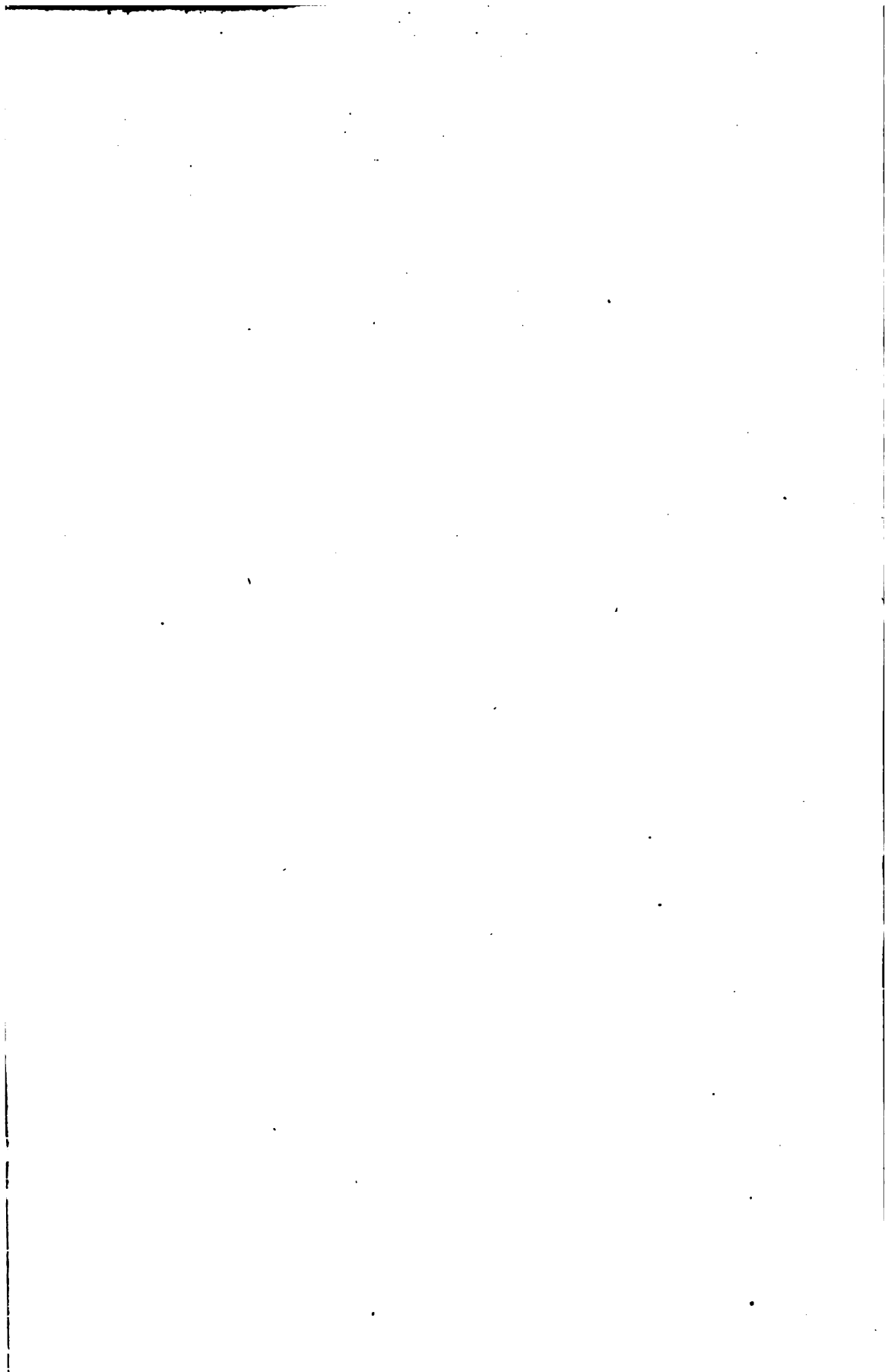
AMERICAN

Amateur Photographer.

VOLUME III.

JANUARY TO DECEMBER, 1891.

NEW YORK, N. Y.
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1891.



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THE AMERICAN
AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

BOSTON, MASS., JANUARY, 1891.

No. 1.

Our Illustration.

MISS SLADE'S negative of the "Midnight Sun," of which we give a photo-gelatine reproduction in this issue, is a graphic presentation of a scene which but few photographers have been fortunate enough to reproduce by photography. We are confident that our readers will share our pleasure in viewing this unusual scene.

Impressionism in Photography.

BY A. G. TREAT.

[Lecture before the Pacific Coast Amateur Photographers Association, December, 1890.]

IMPRESSIONISM in art has been described as "The record of a visual sensation in all its freshness, without the complication of its simple purity by the addition of hypothetical lines or masses which the eye has not directly observed."

Before the term impressionism can be applied to the productions of the camera, we must first thoroughly understand what it means when applied to the work of the painter.

If you look at a landscape where the elements which go to make it a harmonious whole are simply arranged, your eye will be at once attracted to the main object of interest. That object is the backbone of the picture, without which there would not be sufficient interest to make the view pleasing. It may be that one or more of the subordinate elements of this view in some way interfere with the main object, either in size, color, or form. It is the object of the artist, who tries to paint this landscape, to make his interpretation of the scene as attractive, as idealic, as possible; so he changes these conflicting elements until they are in accord with the principle object of interest. If he ignores most of the detail, and seeks to give only an impression of form and color, letting the imagination fill in most of the detail, he is called an impressionist. Of course there are impressionists who rep-

resent the extreme, and impressionists who represent the happy mean of the middle line. It is from the work of the latter that we will draw comparisons.

True impressionism is founded upon the fact that the intelligent mind objects to having everything shown,—that it is best pleased when left to do a little thinking for itself. In reading a book we do not care to have things too minutely described. First, because we would grow weary of the detail; and next because we want to do a little imagining for ourselves. And so with pictures. Too much detail is tiresome to the eye, does not allow our imagination any scope at all, and, what is of great moment, frequently attracts our attention away from the most important object in the production.

Imagine a view with a group of trees in the middle ground and cattle feeding underneath them. Let an artist of the Dusseldorf School paint that scene, and his foreground will be a marvel of detail. The branches of the trees will show, and every leaf will be strongly indicated; you can almost see the hair upon the cattle. Perhaps you will marvel at the apparent fidelity of the detail, everything seems to be so correctly drawn. But, is the impression correct? Is the effect true to nature? Do the trees seem to sway with the wind? Do the cattle seem to be moving as they feed? Is your eye directly and unerringly attracted to the theme of the painting? Does the picture please and impress you?

Now let this same view be pictured by an artist painting in the broad style. Near to, the foreground is but a smudge; the cattle are mere dots of pigment, probably without feet; the trees are unmeaning patches of color. But take the proper focus and the effect is changed. The foreground is inconspicuous, and, while only indefinitely suggestive, leads you by subtle gradations to the middle ground, where the cattle seem to be moving about as they feed in the rich grass. The trees seem to sway with the summer breeze, and through all there is the suggestion of atmosphere. That is art—not the mere copying of the details of Nature, but rather suggestive of her poetry. The details of nature cannot be copied for they are too infinite; they can only be suggested.

Some writers assert, and Robinson, the English photographer, is one of them, that when one looks at a landscape the eye sees detail everywhere. Very true, but it does not and cannot see detail everywhere all at once. One cannot look at two things at the same time and do each one justice. And if there is in a picturesque view, as there should be, a principal object of interest, all outside detail is lost sight of when contemplating that object. Then why should we represent, in a photographic reproduction, the detail we take no notice of when looking at the thing itself? Why should we demand from the limited possibilities of a photograph more than we exact from illimitable nature?

The subordination of detail to effect is a natural law. The history of a people is best remembered by the principal events of their era, and

if in a description of those events detail concerning minor events be given, their importance becomes lessened and a distinct impression has not been made upon the mind. Some writers have a happy faculty of presenting in a few words descriptions so vivid that the reader sees with the authors' eyes. If in these graphic descriptions the author descended into petty detail, he could not make so strong an impression. It is but natural that when one is called upon to give attention to two or more things of equal importance at the same time, the result is a clash. There is a confused impression, consequently but little can be remembered.

In giving an example of broadness in art I do not know of a better illustration than the effect of a clever water color. Upon close study there is nothing to suggest the realistic impression produced when the proper focus is maintained. A photograph is far removed from a water color, it is true; but they are alike in this,—both are reproductions from nature upon the flat plane of a piece of paper. And if a broadly painted water color gives such an agreeable effect, why should it be necessary for a photograph to show minute detail? Why not take a lesson from the many years' experience of painters, and do as they have not only found it best to do, but necessary to do, in order to secure the most truthful effect?

There is an old saying in studios, applied to those who almost touch their faces to a picture when criticising it: "Kick him on the nose." One is tempted to carry the advice into execution, when some would-be critic says of a really good production of the camera: "What's the matter with it; it isn't sharp." An artist can only paint or reproduce so much as he feels. His object is to make upon the minds of others the impression nature made upon his. But he cannot make that impression if those who see his pictures have not sufficient appreciation, if they have not studied nature enough to enable them to declare whether or not the effects shown are truthful. Any one can, to a certain extent, criticise the drawing in a figure, because we see figures all our lives and, in a measure, study them. But very few study nature. How many can tell whether the clouds in a painting are lighted correctly; and yet who has not looked at and admired a clouded sky? The mission of every reproduction of Nature is to suggest her beauty, her power, and her grandeur. After these attributes are suggested, appreciation can come only from those who know from their own observations how truthfully they have been suggested. So when a person looks at one of your photographs and dogmatically tells you it isn't sharp, you can labor with him and tell why you are glad it is not. But, if you have produced a poetical composition, and your critic cannot see the beauties in it, envelop yourself in a mantle of silence, for your auditor is not in the same plane of intellectual appreciation with yourself, and no amount of argument on your part can change him. Some of these critics are queer creatures. Show them a photograph in which some of the elements are out of focus, and properly so,

and they will immediately draw your attention to the fact. Tell them a mild fib, that the photograph is a copy of a painting by our friend Brush, the noted artist, and they immediately see beauties that were previously concealed from them.

Before an artist can paint broadly he must serve an apprenticeship in painting minutely, in drawing detail accurately. It takes him a long time to find out what to leave out. And so with the photographer; before he can produce broad effects with his camera he must be thoroughly accomplished in the arrangement of the image upon the ground glass. He, too, must find out what to leave out in order that details may be made subordinate to the main theme of his composition. Unfortunately the means for accomplishing this result are few. Lack of definition in minor objects of interest, coupled with a suitable lens for such work, are his only possible assistants. It is strangely so, but the best lens for such a purpose is a cheap one of the second grade. It is difficult to make a fine lens cut poorly, while an indifferent lens does so as a matter of course. The lens must, however, be able to completely cover the plate at all times.

In producing a landscape to meet the ideas of those who admire what we must call, for lack of a better term, "impressionistic photography," select a point of interest in a composition, some important object, the whole or part of which adjust to moderate sharpness. Then see if the importance of that object is lessened by what should be subordinate. If it is, then reliance must rest upon the swing back and the judicious use of large diaphragms. One should not be governed by the idea that it is necessary to make a copy an exact likeness of the scene. Suppose that for the sake of the picturesque you do distort a little; what matter, so long as the effect, in the main, is truthful to nature as a whole rather than to that locality in particular?

I once made a successful picture, which I have called "Spring Rains," out of a landscape that was not specially interesting. A piece of overflowed land, a line of trees in the distance, and some clouds in the sky were the simple elements out of which I was to try and make a picture. By using a nearly open lens, some unsightly telegraph poles were thrown out of focus, or, more properly speaking, were not allowed to come into focus. By using the swing back I secured good definition in the middle-ground upon the bunches of grass sticking up through the surface of the water, thus making that part all-important, and drawing attention to my motive, the overflowed land, and the consequent suggestion of "Spring Rains." To properly focus the different parts of the composition took me all of fifteen minutes.

What I have said, concerning lack of detail, applies principally to landscapes, and I have spoken particularly of landscapes because it is easier to illustrate my ideas from them. The principles set forth apply equally to figure and genre studies, for in all productions intended to please the

artistic sense, detail must give way to motive. The motive of a picture is paramount to every other consideration. If there are figures in a landscape they should have the attention their importance in the composition deserves, and no more. If the detail in them is too well defined, when they are only intended as accessories, their presence will hurt the effect of the picture by attracting attention away from that object upon which it is intended the eye should rest. On the other hand, if figures are not sufficiently defined, it will be difficult to recognize their purpose. The same rule of subserviency applies when the figure or figures are all important, and the landscape accessory. By subtle gradations of detail and tones the attention should be unerringly directed to the motive of a composition.

In studies of architecture, where the object of interest extends nearly to the edge of the plate, all parts of the image should be reasonably sharp. The architect has, presumably, so massed his material that your attention is directed to the proper place in his design. In portraiture the best galleries are now using lenses made specially to secure moderate sharpness in one point at a time only; and as gallery photographers are now studying more closely what is good in art, and applying to their work its principles, their productions are gradually becoming more worthy a place in the domain of art. Some of the noted photographers of the country will probably severely criticise my use of the term "gradually," or at least consider me patronizing. But I have taken, as representative of their progress, the successfully competitive pictures of their annual conventions. From a strictly critical standpoint there is much to be desired in even their prize pictures.

The substance of these remarks is the result of reflection after hearing a friend, who is a very skillful photographer, say, and in good faith, too, that a photograph should be considered and criticised from a standpoint of its own. I do not believe this; for the same rules governing composition, perspective, and the proper balance of light and shade, must be the same in photography as in painting, for both are transcriptions from nature. The laws governing the criticism of art productions are founded upon truth. They are the result of the observations of men who have given a life-time to the study of nature and of art.

The landscape painter seeks to give upon his canvas the effect that nature makes upon his mind; while the average photographer is content to give the effect of nature as reproduced through an unsympathetic lens. Some may think that the lens, being mechanical, cannot be wrong in its productions,—that the effect it produces must necessarily be correct. Now the lens, when stopped down, is, to a considerable extent, a small telescope. While it does not bring the distance nearer than it ordinarily appears, it does make detail in the distance appear sharper than it seems to the eye. This statement may not seem true until some experiments are made to demonstrate it. After

making a photograph of a landscape in which there is distance, using a small stop in the lens, compare the photograph so made with the view itself, and you will observe that the detail of the distance is sharper in the print than it seems to the naked eye. A photograph is in black and white with intermediate tones which represent the many colors of nature. Now imagine a certain landscape, in which the color of one object makes soft contrast with another. Detail is subdued and the result is a pleasing mass. Any reproduction of that view, whatever the process, should preserve that effect of softness, even if it cannot reproduce the color.

The eye is often deceived by the brain. For instance: In the distance the eye observes a tree. The leaves cannot be seen, yet the mind, knowing that the green mass is composed of innumerable leaves fancies it can see them. If you will look about you when out in the country, you will be astonished, perhaps, at the little detail you can actually see unless you look for it. That cow over there, a hundred yards away, you thought was a piece of red rock until you saw it move; and that gray rock on the hill yonder you believed it to be a bunch of bushes until you approached it. But in neither the cow nor the rock, even at the short distance of a hundred yards, can you see detail.

The study of paintings, and the study of etchings particularly, is the best possible training for that æsthetic sense, that appreciation of harmony, which is so necessary to the photographer. He can only select what is pleasing; and though he may feel that certain things are inharmonious he cannot change them. To be able to intelligently criticise a work of art, to be able to call attention to the merits and point out the faults in any production of the needle of the etcher, or the brush of the painter, requires considerable schooling. One must study not one painting, or one etching, but hundreds of them; not the work of one artist but of many. The ability to intelligently criticise is no royal gift. One may have innate taste, a sense of form, and a correct eye, but these faculties are not all sufficient. One must have certain knowledge in order to combine these faculties, and knowledge can only come from close application.

There are certain laws which explain why the art productions of man are beautiful. And the same laws apply to Nature, for certain parts of Nature are only beautiful when the elements which go to make them are in harmony with one another. The laws of harmony are absolute, and they apply to everything in form of color which attracts our admiration.

I have tried to prove that the painter shows no more detail than it is natural for the eye to take in; that sometimes to call attention to a particular or important feature, he exaggerates one thing and subdues another, that the desired effect, and a harmonious effect, may be produced. As Emerson says in his essay on art, "Omit the prose and details of Nature, giving only the spirit and splendor." And I have tried to make it plain that photographers

must follow in the wake of the masters of the brush who have already studied out the laws governing the beautiful if they wish their work to find a resting place within the domain of the fine arts. There are now, and always will be, two kinds of photographers: Those who make copies of Nature, and those who make pictures from Nature. The productions of one give an excellent idea of the characteristics of a locality, and are pictorially descriptive thereof. The pictures of the other suggest the feeling, the poetry, and the subtle beauties of creation. You look at the views of the first and are soon satisfied, but the pictures of the second afford you continued interest, and awaken in you emotions of keenest pleasure.

A Voyage to the North Cape, Norway.

BY ELIZABETH ALMY SLADE.

IN OUR way to the North Cape we found Throndhjem a very good starting point, reaching there the 22d of June, on the eve of the Norseman's midsummer day. As the ancient capital of Norway, this northern town contains one chief object of interest, the beautiful cathedral of Saint Olaf, the most northern gothic relic of Europe, and where the kings and queens of Norway and Sweden have always been crowned. The church-yard is used by the people as a public park, and there gather in summer, when day and night are as one, men, women, and children, forming most picturesque groups.

A peculiar feature of this grave-yard is, that the graves are one and all carefully tended and decorated every Saturday with freshly cut flowers, giving to the whole spot a bright, cheerful look.

The water front of Throndhjem, as one of the great salt-fish markets of the world, is lined with fish warehouses of wood. These are painted in subdued browns, relieved here and there by one of white or green, and have a certain sombre picturesqueness as they stand in long lines



CATHEDRAL, THRONDHJEM.

reflected in the water by the light of the evening sun. The fish market of Thronthjem is a lively scene. It is held by the water's edge, and the queer canoe boats, with their square sails of faded brown, come from far and



FISH MARKET, THRONDHJEM.

near to unload here their treasures of the deep, and the activity of the scene tells plainly to a stranger that in the buying and selling of fish these simple people of the north find their wealth.

On a beautiful June evening, at ten o'clock, under a sky still bright with sunset clouds, we started on our nine days' voyage of some fourteen hundred and fifty miles. A nine days' wonder that voyage truly was from beginning to end. The first point of interest we ap-

proached the following day. Torghatten is a rocky island some eight hundred feet high, appearing in the distance as a huge hat floating upon the sea, pierced in the center with a curious hole. The legend tells us a marvelous tale about this hat with its hole. The captain of the Sverre Sigourdson came to anchor at the foot of the island, and in the midst of a pouring rain boat-loads of men and women were rowed ashore to toil up four hundred feet to the curious fissure which forms a rocky arch in the midst of the island. Later in the day the clouds lifted somewhat and we caught glimpses of snow mountains. But the sun would not show itself to us that first midnight, after entering the Polar Sea.

To fully enjoy this northern water trip one must be a good sailor, for much of roughness is encountered on some part of every day, even in fine weather. But the captain of these tourists steamers is very considerate, and always arranges for quiet water as a part of the *menu*, the steamer sometimes stopping the whole of dinner time! This happened the second day just before crossing the Vestfjord. After that the steamer is safely sheltered by the lofty peaks of the Lofoten Islands. The most beautiful passage through these is the Raftsund. It is very narrow, and winds and twists about like a crooked river among island mountains, which rise abruptly from the water in many and most beautiful forms, their summits covered with scattered patches of snow. The afternoon we made the passage, many of the higher peaks were hidden by clouds, forming a veil which gradually broke away as we left the sund. Then was disclosed to us the more distant islands in all

their grandeur, range after range of snow-covered mountains, their rugged and jagged peaks piercing the blue sky. The subjects for sun pictures that afternoon were many, and those of us who had the opportunity did not miss it. The cloud effects were fine, and the viking fisher-boats were on every hand. It was indeed a red-letter day, with a fitting end, for that night we saw, in Vaags Fjord, latitude sixty-nine degrees, for the first time the mid-night sun. All the evening the heavens had been suffused with light clouds. Those in the north-west gradually became luminous, as the magic hour approached, with the most brilliant sunset hues. The solemnity of the scene was most impressive, as slowly the sun made its pathway through the heavens, always high above the horizon, and as slowly in the north-east the cold colors of early dawn spread over the sky. At one o'clock A.M., all had faded into the bright light of another day.

On this whole trip one is kept constantly on the alert, for always there is something new and strange to see along this grand Norwegian coast, and one does not willingly lose any part of the magnificent scenery. There is no darkness to mark the boundary between day and night, and one gives grudgingly to sleep the precious six hours out of the twenty-four.

Tromsø was the next point of interest reached. The town is situated on a beautiful harbor inclosed by snow mountains. We were all eager to see those strange little people, the Lapps, who largely compose the inhabitants of this region. The water was gay with their canoe-shaped boats, as they swarmed about the steamer, forming most fascinating pictures, to which their curious costumes added not a little. After an early breakfast the ship was quite emptied of its passengers, as they were rowed first to the shore opposite the town of Tromsø, there to visit the summer encampment of these nomadic Lapps. The small birch wood, through which the walk up the valley lay, was clothed in the first freshness of early spring, for here in Nordland spring and summer together are but barely six weeks long. As we approached the camp we were met by men, women, and children clothed in garments which we could readily believe were changed only when worn out or out-grown. Family heir-looms they appeared to be. The huts these people live in are round in form, made of earth and wood, overgrown with grass. Some of us were courageous enough to enter several of these mansions. The only light comes from the door, in the center a few stones serve as the family hearth, and a general smokiness pervades the interior. Some of the small Lapp children looked like little monkeys with their brown, wizened faces. They were dressed like their elders in short frocks tied about the waist with bright belts, pointed moccasins on their feet, the ankles closely bound with bands of gay colored tape. Altogether they presented a strange and fantastic appearance. These little people of Lapland are very



LAPP WOMAN AND
CHILD.

shrewd, and are decidedly spoiled during the short tourist season, when they are visited almost daily by hundreds of travelers. The camera is no longer a stranger among them, and a high price is demanded for the privilege of taking pictures. Only when they are distracted by many boxes is there any chance of getting something. The chief sight of the camp is the herd of reindeer, the Laplanders' great source of wealth. I was fortunate in securing a picture of the herd before it and the owners became excited. This, I was told, happened later, and many were the disappointed ones. Away from the crowd, I induced a woman with a little child to stand a moment beside her hut. A few sweets in the form of lemon drops were highly appreciated and obtained for me willing models.



BOATS, TROMSØ HARBOR.

After leaving the Lapp Valley we returned to the shore and were rowed across to the town of Tromsø. Here we found more Lapps and interesting boat subjects in the harbor.

As we steamed away from Tromsø we settled ourselves on deck for a quiet afternoon. The day was superb, clear and cool, and that night we saw the sun shining at midnight, in a cloudless sky, as brightly as at noon. It apparently was as high above the horizon line as it would be

with us at four o'clock in the afternoon on a midsummer's day. Only through smoked glass could we look at it in comfort.

Early the following morning we touched at Hammerfest, the most northerly town in the world. Here, far up within the Polar Circle, we had gotten beyond the growth of trees (not one will grow in this barren region), and the town of Hammerfest presents a cold appearance, as it is seen in the distance with its gray rocky background. But the town was gay this Sunday morning with Lapps from all the region round about, assembled for a conformation service. Here they are called civilized, and presented indeed a contrast to those we had seen the day before. Though still dressed in their peculiar costume, their appearance was cleanliness itself. Evidently the aristocrats were abroad. The half hour given to this town was an aggravation, a glimpse and nothing more.

We were due that evening at the North Cape, and as the day wore on many were the speculations as to our chances of landing, and seeing the

midnight sun at this most northerly point of our voyage. Alas for our hopes! A Polar fog closed in all about us late that afternoon. The steamer was forced to stop, as they always do under such circumstances. But in the course of an hour the fog cleared and we steamed on our northerly way. The scenery was cold and dreary, masses of barren rock, the only vegetation, the patches of green grass scattered here and there, and the rain which fell added to the sombre aspect. After passing the towering Bird Rock the sea ran high, and so continued until we reached the foot of the North Cape cliff, the most northerly land in Europe. There is no harbor here, and it was with difficulty that even a partial shelter was found for the ship. In spite of all, several passengers landed and partly ascended the Cape, which rises from the sea nearly a thousand feet. Many of the protected nooks were green with the bright grass of spring, and here at this season, in latitude of seventy-one degrees, bloom in profusion the most beautiful wild flowers. Violets, buttercups, and forget-me-nots were among the trophies brought back, showing that Norway truly maintains to the uttermost ends of the world the marvelous richness of her flora. After tossing about on the wild waves for several hours in the vain hope that the storm would abate, the order was given at eleven o'clock P.M. to turn south. We were told by the captain that seldom had he seen at the Cape a fiercer storm. Not until the next morning did it cease.



OFF THE RAFTSUND.

On the return voyage the steamers take a somewhat different course. It was about midday that we approached the magnificent Lyngenfjord, noted for its fine scenery, the towering mountains, with their hundreds of glaciers and water-falls, rising four and five thousand feet from the water. The steamers go about half way up the fjord, then return, continuing on to Tromsö. Here, early on the morning of the seventh day, a second short stop is made. The light at five o'clock A.M. was beautiful. Just the same long shadows and reflections, with all the softness, of late afternoon. But if one has been up until one o'clock A.M., it requires some energy to be ready to seize the opportunity that comes four hours later. The reward in our case was worth the effort, first at the time in seeing the beautiful harbor pictures, later in watching the development of some of these pictures.

The last great wonder of the Arctic region was seen on the eighth day. This was the famous Svartisen Glacier, one of the most important of Europe, and the greater part of it lying just within the Polar Circle. It



REINDEER AND HUT.

covers a space of sixty-two square miles, and, like all such frozen rivers, is a grand and impressive sight, both as seen from afar, the huge mass of glittering whiteness lost in the distance, and as one tries to comprehend its vastness when standing at its foot, amid giant blocks of ice. As the steamer ran out of the little bay at noon it was but to continue the rest of our voyage over familiar waters. All that afternoon those northern waters were a constant source of interest

as we came upon boat after boat of the old viking form, whose pointed prow and stern and square sail so exactly resembled the ship of the Norseman of a thousand years ago.

When we landed at Thronhjelm, on the ninth day, we fellow-travelers, representatives of eleven nations, were as one in our regret that this was the end of a voyage in which Nature had unfolded to us, day by day, and night after night, such marvels of beauty and grandeur. The memory of it all can never utterly fade, for bright with continual sunlight are those days and nights of a glorious northern summer.

Printing with Primuline.

BY W. JEROME HARRISON, F.G.S.

PRIMULINE (from *primula*, the primrose) is the name given by Mr. A. G. Green to a new yellow coal-tar dye which he discovered in 1887. This dye is especially valuable for the "fast" bright-yellow hue which it imparts to calico, the molecules entering the fibres of cotton, and producing "ingrain" colors of great permanency. Chemically, primuline is a soda salt of sulphonic acid.

When calico so dyed is immersed in a weak solution of nitrous acid, a "diaz compound of primuline" is formed, which is sensitive to light—about twice as sensitive as ordinary "silver sensitized albumenized paper." Indeed, to dull or to yellow light the proportion is much greater, for the diazo com-

pound appears to be as sensitive to yellow and to red light as to blue and violet, and most sensitive of all to green. For this reason it is hoped that it will be serviceable in orthochromatic photography, and experiments are now being conducted to ascertain if it has any value in that direction.

Since it is the diazo compound of primuline which is sensitive to light—and not primuline itself—the name of “diazotype” has been chosen by the inventor for the printing process which has been founded upon the discovery of the properties of this new yellow dye.

After the calico has been diazotized by soaking in nitrous acid, it is printed in the usual way by exposure in a printing-frame underneath a photograph on glass, or under an engraving, print, etc. A peculiarity in the process is that it gives a negative from a negative, and a positive from a positive. It is, therefore, a good plan to use transparencies on glass to print from. Leaves, ferns, or any opaque, or partly opaque, objects can be arranged so as to form a pretty pattern. Architects' plans can be reproduced, etc.

The exposure lasts for from five minutes to half an hour to diffused daylight. The light acts upon and decomposes the diazotized primuline, and forms a compound of a pale yellow tint, which is chemically inactive. The image ought, after printing, to be just visible, somewhat as in the platinotype process.

The printed calico is next developed by being dipped into a weak solution of one of the “phenols or amines,” which combine with the *unaltered* diazo compounds, and produce tints of all the colors of the spectrum except green, according to the particular developer which is employed. It then only remains to wash and dry the calico, and the print is finished.

Paper may be used instead of calico; but it is then better to only *float* the paper upon the surface of the several solutions.

Silk, wool, and linen also answer well; but as their fibres do not absorb the various liquids so quickly as the fibres of cotton do, more time must be allowed in each solution.

PRACTICAL DETAILS OF THE DIAZOTYPE PROCESS.

Printing on Calico.—Buy two or three yards of the finest “India” calico, without “dress,” if possible; but as all calico appears to contain a little of this white powder, the calico must be well rinsed and squeezed in several changes of water to get rid of it. Before this is done, however, the calico should be cut up into pieces of the sizes desired for printing.

Dyeing.—Weigh out fifty grains of primuline, and add it to one pint of boiling water; shake well, and add five grains of sodium chloride (common salt). Put the pieces of calico in a clean porcelain dish, and pour the boiling dye upon them, moving them about until they are well saturated. After five minutes remove the calico, and rinse well in several changes of cold water; wring out and dry between blotting-paper, under heavy pressure. The material should now be of a fine primrose yellow color.

Sensitizing.—Prepare a solution of nitrous acid by dissolving thirty grains of sodium nitrite in one pint of cold water; add to this fifty grains of oxalic acid dissolved in one ounce of water. Dip the dyed calico into this nitrite solution, and move each piece about for one or two minutes. The calico changes color to a brownish-red, and is rendered sensitive to light. This sensitizing operation must, therefore, be conducted in a faint light, as in an ordinary room with the blind pulled down, or by a gas-jet turned half down. Rinse the sensitized material in two or three changes of water, squeeze it as dry as possible, and dry as before between blotting-paper under pressure. The sensitized material does not keep well; in fact, the sooner it is used the better are the results obtained.

Printing.—Printing may be done in an ordinary printing-frame, and in exactly the same way as when using ordinary sensitized paper. Or a flat board may be covered with white paper, the sensitized calico laid upon it, and the objects which it is desired to copy—leaves, ferns, flowers, dried seaweeds, insects, prints, engravings, etc.,—laid upon the calico, and then covered with a sheet of plate-glass. A small strip of the sensitized calico should be exposed to light at the same time, and when this strip is no longer colored by a drop of the developer to be used, it is a sign that the exposure has been sufficient. With a printing-frame, however, the surface of the calico can be examined, and all the outlines of the object ought to be faintly visible. The effect of light is to change the “diazotized primuline” into a new compound, which is incapable of combining with the developers used.

Developing.—A remarkable feature of the diazotype process is the ease with which prints in any color (except, at present, green) can be obtained. The exposed material is simply dipped into the developing bath and moved about in it for a minute or two. The developer unites with that part of the diazo compound which remains unaltered by the light—having been more or less protected by the opaque parts of the object from which the print is being taken—while the parts to which the light has penetrated become of a faint yellow tinge. The inability to get a white “ground” is at present one of the defects of the process. After development, the prints are well rinsed, and then dried and ironed. It brightens them up a little to give them a rub in some hot, soapy water. They are then permanent—or, at least, are believed to be so, from the tests we have been able to apply in the limited time for which we have practiced the method.

Developer to give Maroon Prints.—Dissolve $\frac{1}{4}$ oz. beta-naphthol-disulphonic acid in a pint of cold water.

For Red Prints.—Beta-naphthol, 60 grs.; caustic soda, 80 grs.; cold water, 1 pint.

For Orange Prints.—Resorcin, 50 grs.; caustic soda, 80 grs.; cold water, 1 pint.

For Brown Prints.—Pyrogallie acid, 80 grs.; cold water, 1 pint. Another

way of obtaining brown tones is to make a solution of about the same strength as of pyro, of phenylene diamine hydrochloride.

For Black Tones.—Eikonogen, 100 grs. ; cold water, 1 pint. Must be used while quite fresh ; in fact, before all the eikonogen has dissolved.

For Yellow Tones.—Phenol, 100 grs. ; caustic soda, 150 grs. ; cold water, 1 pint.

For Purple Tones.—Dissolve 100 grs. of naphthylamine in $\frac{1}{2}$ pint of boiling water (rubbing it up, if necessary, in a mortar) ; add 10 grs. of oxalic acid (crystals) ; and make up to 1 pint with water. With this "purple" developer it is needful, after rinsing, to soak the developed print in a weak solution of tartaric acid (50 grs. to 1 pint of water), and then dry roughly and iron quickly. The fingers should be kept out of this developer, as it stains them brown.

DIAZOTYPES ON SILK AND WOOL.

Thin, closely-woven fabrics made of either white silk or wool, can be printed upon in exactly the same way as materials made of cotton. But these animal fibres do not absorb the various solutions so rapidly as the vegetable fibres which compose cotton. We must, therefore, leave them to soak for a longer time in each bath, say twenty minutes in the dyeing liquid, and three or four minutes in each of the others (sensitizing and developing baths). Silk and wool also require longer to print.

DIAZOTYPES ON PAPER.

Any white, well-sized paper, as envelopes, writing paper, etc., can be used in the process, being treated in exactly the same way as calico, except that it is better to merely *float* the paper on the surface of the several solutions instead of immersing it ; inasmuch as the paper is almost certain to tear, if thoroughly wetted. The paper should be drawn over the edge of the dish in which it is floated (to remove as much of the solution as possible) and should be dried by being pinned by one corner over a piece of string fastened across the room ; a fragment of blotting-paper pressed to the *lower* corner of each piece serves to soak up the drops which would otherwise fall on the floor.

All the solutions employed in the process can be used over and over again ; but they should be kept in well-stoppered bottles.

PHOTOGRAPHY IN COLORS.

By taking a little of any developer named above, and mixing it with a little starch to thicken it, it can then be applied to the print locally with a brush. In this way several developers may be applied to different parts of the same print, and as many colors produced. Except in the case of patterns produced by leaves, etc., it is probable, however, that the particolored prints obtained by this means would be more curious than artistic.

DIAZOTYPES UPON GLASS.

To obtain transparencies, lantern-slides, etc., by the primuline process, it is necessary first to coat glass with a solution of primuline in gelatine. This solution may be prepared as follows :

Gelatine,	1 ounce.
Primuline,	80 grains.
Chrome alum,	2 grains.
Water,	1 pint.

After coating, the plates must be dried in a place free from dust.

Sensitizing is effected in the nitrite bath described above, each plate being left in the liquid for five minutes ; after which, it must be washed in water for five minutes, and then dried. The sensitized plates will not keep for more than two or three days. They are exposed and developed in exactly the same way as calico, silk, etc.

USES OF THE DIAZOTYPE PROCESS.

To the urgent inquiry which is generally made as to the "use" of any new, and as yet imperfect process, the best reply to make is to ask the inquirer "What is the *use* of a baby?" The first efforts of Daguerre, or of Fox Talbot, would now be considered the veriest rubbish, but photography has proved of some *use* for all that.

It is pretty certain that diazotype has a considerable future before it, simply as a decorative process. It is very cheap—even under present conditions I calculate that whole-plate prints can be produced on calico at the rate of "four a penny"—and it seems probable that curtains, hangings, dress materials, and, in fact, every variety of textile fabrics may be cheaply ornamented with designs direct from nature. A young lady may wear a silk dress printed all over with the portraits of her admirers ; or she may signalize her admiration for her favorite poet by selecting apparel adorned with scenes from his poems ! On a minor scale, I have already seen aprons, *serviettes*, etc., printed with vignettes from an amateur's negatives. The back page of a letter may be used to carry a souvenir of the spot from which it is written ; and the corner of the envelope may contain a portrait of the sender. For copying engineers' or architects' plans, tracings, etc., it is possible that diazotype will also be very useful ; in which case it will displace the well-known "blue" process.—*From "The Camera."*

THE
AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

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No. 1.

W. H. BURBANK.

EDITORS:

F. C. BEACH, New York.

CATHERINE WEED BARNES.

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EDITORIAL COMMENT.

Our New Volume.—With this number we begin the third volume of our effort to give the amateur photographers a magazine devoted solely to their interests. We are constantly receiving kindly words of praise and encouragement, for which we are grateful and which we hope have not exceeded our deserts.

The general policy of the magazine will remain unchanged, and we shall do our best to present each month a timely, helpful, and interesting account of camera matters, always aiming to present photography as an earnest, dignified, and manly means of recreation, suited alike to the grave and the gay, the old and the young, and containing within it the possibility of an education of eye and brain to the perception and appreciation of the beauties of the world in which we work and play.

Our readers can help us in many ways towards the realization of our

aims,—both by sending us brief and pointed sketches on any matters connected with photographic work and by bringing us to the attention of their amateur friends.

With best wishes for a "Happy New-Year" to all our friends we begin our third volume.

Our Clubbing Rates.—While we are always willing to give intending subscribers the benefit of the special rates which we are able to obtain from publishers of other magazines, we desire to call special attention to three very attractive offers which we are enabled to make.

Among the best illustrated monthlies the *Cosmopolitan* has rapidly come to the front, both because of the beauty and variety of its illustrations and the general high character of its reading matter.

Our special rate of \$3.00 for the two magazines has already been taken advantage of by a goodly number and this repetition of it will, it is hoped, induce many others to secure the magazines at the reduced rate.

Every canoeist and most lovers of boating are familiar with that bright exponent of canoeing, *Sail and Paddle*, which always brings with it the breeziness and freshness of the mountain, stream, and lake. It is published monthly, and we will furnish it with this magazine at the low rate of \$2.25.

Among our contemporaries none is more welcome to the editorial table than the *American Journal of Photography* which, after a long and useful career as a dollar monthly, has recently increased its rate to \$2.00 and made many improvements. By special arrangements we are enabled to send our own magazine and the *Journal* for \$3.00. This offer practically gives a semi-monthly magazine at a rate only slightly in excess of our regular subscription.

Eikonogen and its Vagaries.—Ever since the advent of eikonogen, great fault has been found with the rapid deterioration of the crystals, even when kept in closely sealed receptacles. The crystals of all the forms of eikonogen hitherto placed on the market have blackened rapidly, and a solution of these darkened crystals, while possessing good developing powers, is too opaque in color to make it easy to watch the process of development.

The announcement is now made by the manufacturers that a method has at last been discovered by which the alteration of eikonogen can be entirely prevented, but unfortunately the method is kept a close secret. It has been found possible to preserve eikonogen in powder fairly well by mixing with it a small quantity of meta-bisulphite of potassium. With this simple means at command our readers can easily improve the keeping qualities of their favorite developer. The amount of meta-bisulphite added must be very small, since a large proportion diminishes considerably the developing power of eikonogen.

Cadmium Intensification.—Dry plate negatives may be intensified by a

preliminary treatment with dilute ammonia followed by the application of a 10 per cent. cadmium bromide solution in alcohol.

The Conference of Amateurs.—We give this month a full report of the meeting held in New York early last month, which resulted in the formation of a Conference of American Amateurs. As we understand the matter, the proceedings of this preliminary meeting are to be regarded as provisional only, and of no binding force except so far as they may be ratified at a later meeting to be held in April. Hence we feel at liberty to offer a suggestion or two by way of criticism and suggestion.

At the outset we may say that we regard the movement as the most important step yet taken in the interests of amateur photography, and as far reaching in its aims and purposes. Having been for many years a close student of the trend of American amateur photography, we have long felt convinced of the need of a national organization to centralize and focus the efforts of the few earnest spirits who have labored single-handed in behalf of a higher aim and nobler purpose in the practice of our art, which has not yet attained its highest flight among us. Such an organization as the one under discussion can do much, with good management, to advance photography as a dignified and manly means of recreation, and to encourage the scientific investigation of many still unsolved problems.

The spirit of the preliminary meeting was all, we are happy to say, entirely in this direction. There was manifested an earnest purpose to keep the organization free from all commercial entanglements, and to make it a means to the cultivation of photography in its highest and best sense. The officers chosen are known to be earnest workers, and may be relied upon to do all in their power to make the movement a success.

The principle of club representation by delegates is wise and will tend to the speedy dispatch of routine business, always a source of vexatious delay in deliberative bodies. But why confine the selection of delegates to organized clubs?

The vast majority of amateur photographers are, either from choice or necessity, unconnected with any of our numerous clubs. A truly national organization should recognize the existence of this large body of unattached amateurs and adopt measures to secure their membership. To this end some means should be adopted to give them a voting representation at the deliberative meetings. They should have their delegates as well as the clubs, and since it would be difficult to select such delegates by vote of the class which they are to represent, the better plan, it would seem, would be to have them selected by the executive committee of the Conference. This would remove the difficulty of non-representative taxation, which the preliminary scheme involves, and would, we confidently believe, secure a large membership of the amateurs at large.

We are also of the opinion that three dollars is too large a sum for the

annual dues. The aim of the Conference should be to secure as large a membership as possible, and for this reason the dues should be kept at the lowest possible figure. Two dollars would seem to be ample to meet all the legitimate expenses of the Conference, and it would probably attract a larger membership than a higher rate.

These few suggestions are not offered in a spirit of captious criticism, but simply as a personal contribution towards the solution of the question, "How can the Conference win the largest possible success?"

Our Change of Base.—The publication office of the magazine will hereafter be at No. 50 Bromfield Street, Boston, Mass., Room 27, and will be in charge of Mr. Burbank, who will be pleased to meet those of our readers who may find it convenient to call upon him. He will also be pleased to give any information and advice in his power personally to any who may find themselves in a photographic quagmire. It is hoped that this change of base may result in a larger measure of success and usefulness for the magazine.

Intensification of Negatives Developed with Eikonogen.—For some unknown chemical reason thin negatives developed with eikonogen do not seem to take kindly to the mercuric method of intensification. Some recent experiments have demonstrated that the uranium method works well in such cases. The well washed plate is immersed for fifteen minutes in a solution of twelve grains of nitrate of uranium in four ounces of water. Three grains of red prussiate of potash are washed twice in clean water to remove the outer coating of ferro-cyanide, and then dissolved in one ounce of water. The negative is removed from the uranium mixture, to which the ferri-cyanide solution is added. The negative is then placed in the mixture until sufficiently intensified, and finally washed for half an hour in running water.

A Liberal Offer—The American Amateur Photographer Free for Three Months.—The publishers of this magazine desire to reach as many amateurs as possible within the next three months, and will send it free for that length of time to any one who will send them the names of fifteen amateurs who, to the best of their knowledge, are not already subscribers to the magazine.

ENGLISH NOTES.

BY THOMAS BOLAS.

Mercurigraphic Methods of Photo-engraving.—Photo-etching processes based either upon the increased readiness with which amalgamated portions of metal plates dissolve in some acid or the greater resistance which they offer to other acids, have been known for some years, but recently Mr. Villon has classified such methods, and so far simplified some of them, as to render them easily serviceable for the ordinary work of the etcher; and moreover the application of photography to these methods is a very easy matter. The basis of the process in its non-photographic aspect may be illustrated by a few examples. An ink is made by smoothly mixing together the following:

Water,	100 grains,
add and dissolve	
Sugar,	50 grains,
then add	
Glycerine,	50 grains,
Alcohol,	100 grains,
Finally mix in precipitated biniodide of mercury, . . .	40 grains.

Or a crayon can be made by incorporating

Biniodide of mercury,	100 grains.
Mercurous nitrate,	10 grains.
Powdered gum,	20 grains.
Water,	a sufficient quantity to make a stiff paste.

With either of the above, writing or drawing is executed on a polished zinc plate, with the result that the subject shows as bright amalgamated lines on the bluish-gray surface of the zinc, and such a plate, having been varnished at the back, is etched with $3\frac{1}{2}$ per cent. nitric acid or with hydrochloric acid of similar strength. The weak nitric acid attacks the amalgamated lines and gives an engraving in *intaglio*, while the weak hydrochlorate attacks the ground and gives an engraving in relief, adapted for typographic printing. In either case, should the lines show signs of being underbitten, the plate should be washed, wiped dry with a soft cloth, and carefully rolled over with the following rebiting ground, care of course being taken to use a hard, smooth roller, and not to let the rebiting ground go into the etched cavities. A little heat will cause the rebiting ground to flow down the sides of the relief, and so protect them; after which the etching is resumed.

REBITING GROUND.

Vaseline,	100 grains.
Bees-wax,	12 grains.
Linseed oil,	5 grains.
Lamp-black,	5 grains.

When an original is to be reproduced by photography, a photo-lithographic transfer is made and put down upon stone or metal in the ordinary way, but instead of inking up the design with an ordinary lithographic printing ink, the following is used:

LITHOGRAPHIC AMALGAMATING INK.

Wax,	40 parts.
Resin,	30 parts.
Resin soap,	20 parts.
Biniodide of mercury,	10 parts.

A print is now taken on transfer paper and put down upon a zinc plate. In two or three hours the lines become amalgamated, the image is washed with turpentine, and the plate is etched as above. Alternatives are to use the above amalgamating ink in the preparation of the original photographic transfer, or to dust the face of the transfer with biniodide of mercury. Again the transfer may be made to zinc or copper with an ordinary fatty ink, and the image on the plate may be dusted with the biniodide of mercury. Another method is to treat the plate as for the ordinary dusting-on process (a gum or sugar and bichromate

mixture), and, after exposure, to dust with the biniodide of mercury. When the amalgamated image is on copper several methods of printing are available, but the simplest consists in rolling up the amalgamated copper with ordinary lithographic ink, which will only take on the unamalgamated parts, but the amalgamation must be kept up by occasional damping with a weak solution of mercurous nitrate, or by carefully dabbing it over with the preparation known to the pharmaceutical chemist as "mercury with chalk."

Flash Light Photography.—Most flash light portraits taken with blow-through lamp, and many of those taken with explosive mixtures, show signs of the sitters having somewhat closed the eyes, and consequently have an unnatural aspect. To meet this and other objections, Mr. Slingsby has been experimenting, and he has given demonstrations as to the best methods of working, the most important points being the following: The eyes should be well acclimatized to strong light before the flash is made—a principle recognized by Mr. Moule, who introduced the pyrotechnical light many years ago,—and this Mr. Slingsby does by burning a magnesium wire close to the sitter for some seconds before the flash, and while this wire is burning the flash is made. Another point insisted upon by Mr. Slingsby is that the exposure should be a short-shutter exposure, made during the time of the flash, and at as early a period as possible during the flash. To secure this he adopts Mr. England's plan of employing the same air current to operate the lamps and to release the shutter, by means of an ordinary pneumatic release. Mr. Slingsby, like Mr. England, uses several lamps operated by one air blast, and he shades the lamps by tissue paper in front, thus reducing the glaring contrasts. In his demonstrations Mr. Slingsby has been remarkably successful, and much useful work has been done in making photographers alive to the best conditions for working. As regards the quality of the results, it seems to me that Mr. Slingsby has produced the best series of single portraits yet shown as flash-light work, but it is a question whether his groups quite come up to the best work of Mr. England.

Mr. Edward Dunmore on Reducing Over-printed Photographs.—What an expert in photographic printing like Mr. Dunmore says is of especial interest. Prints on albumenized paper which are too dark are placed in a bath composed of three grains each of potassium bromide and mercuric chloride in an ounce of water, until the desired reduction takes place, which will be the case in a few minutes. The prints are then well washed. This is a method which Mr. Dunmore has practiced successfully for many years, and with various sorts of paper. It is scarcely necessary to say that only finished prints should be operated upon in this way, not prints just out of the frame.

Cheap Rough Papers for Mounting Prints.—The *British Journal of Photography* points out that very pleasing effects may be obtained by mounting prints on thick, coarse wrapping papers, but suggests the propriety of soaking out any soluble impurities, such as hyposulphites, which might cause the prints to fade. The paper and print damped, the back of the latter, or face of the former is charged with fresh starch paste by means of a sponge (in this latter case a zinc stencil; with an opening the size of the print, is used to confine the starch to where it is wanted). The damping of both print and mount is necessary to prevent curling up as the drying progresses. One of the best methods of drying is to thoroughly warm a few quires of blotting paper, and then to lay the prints between the quires.

CORRESPONDENCE.

To the Editors of the American Amateur Photographer:

I fear that my long delay in jotting down a few items for the benefit of your readers, as I promised you some time since that I would do, has not been conducive to that editorial equanimity which is supposed to be a characteristic of the tribe. Perhaps, however, when my correspondence is fused in the crucible of the editor's sanctum, he will find more dross than silver.

Among the items on page 230 of the June issue of the *AMERICAN AMATEUR PHOTOGRAPHER* is a statement which I should like to correct. It relates to the "Coating of Bromide Paper," and refers to a letter of mine, appearing in the preceding issue of the magazine, viz.:

"On page 208 of our May number Mr. W. H. Gardner alludes to the fact that our Mr. F. C. Beach was one of the first to suggest that the manufacturers put a thinner coating on bromide paper for the purpose of increasing the facility of burnishing."

By turning to aforesaid correspondence in the May number the editors will find that I said nothing of the kind. They have simply misconstrued the import of my remarks on the matter, as there is no connection between the fact of Mr. Beach's suggestion that bromide paper be coated thinly, and the after references as to burnishing prints. In fact, the sentences following the reference to Mr. Beach would presumably lead to inferences diametrically opposite to the one which the editor has drawn, as noted in the paragraph quoted. However, the matter is of no great consequence.

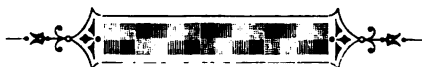
On page 227 of the June number there is mentioned a new intensifier, consisting of ammonia and water in one solution, and an alcoholic solution of cadmium bromide in another. If this intensifier is what it is claimed to be it would be a Godsend to those photographers who dislike the use of mercury, and who do not affectionately incline to uranium nitrate and potassium ferri-cyanide. In an experiment by the writer with the cadmium intensifier he found that a negative fixed in the alum-hypo bath did not yield in the slightest degree to the action of this intensifier. If it be found that negatives cannot be intensified which have been hardened by an application of alum, it is very doubtful whether this method will be of any practical use to the photographer. The formula prescribes the preliminary bath as consisting of equal parts of ammonia and water in which the negative is to be soaked for five minutes. Fancy soaking an un-alumed negative in so strong a solution of ammonia—especially in the hot season! How many negatives would withstand its frilling propensities? Perhaps some of the readers of the AMERICAN AMATEUR PHOTOGRAPHER have been more fortunate in their experiments with this intensifier than has the writer. Will they not make public the results of their trials?

Why is it that the toning of blue prints with soda carbonate and tannin is not discarded? The writer has never seen a blue print, toned by this process, which yielded pure whites in the strict sense of the term. The borax and crude catechu toning bath is much superior. Results can be had from some negatives that nearly equal silver prints (plain) in beauty. Even so famous an annual as that of the *American Annual of Photography* includes the former and omits the latter.

The December number of the AMERICAN AMATEUR PHOTOGRAPHER is at hand, and a look through the index is very suggestive of the good things which the editors gather in and distribute monthly to the hungry amateur. By the bye, if the editors, or any of the AMERICAN AMATEUR PHOTOGRAPHER readers, should happen in Cleveland, they ought not to neglect the opportunity of running down to Bedford—some twelve miles away—and secure some views in the famous ravine of Tinker Creek. The Creek is spanned by the Cleveland and Pittsburgh Railroad bridge, and is constructed of solid stone arches, which support the road-bed, 128 feet above the water. There are many beautiful views to be obtained in the ravine, and it also affords many spots which campers would find quite romantic and secluded.

W. H. GARDNER.

BEDFORD, OHIO, December 28, 1890.



SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The American Photographic Conference.—With a view of providing amateurs in the United States an opportunity of meeting annually for the purpose of considering and discussing subjects in relation to photography, delegates representing the Syracuse Camera Club, the Society of Amateur Photographers of New York, the Photographic Society of Philadelphia, Boston Camera Club, Old Colony Camera Club, Photographic Section of the American Institute, Camera Club of Hartford, Newark Camera Club, Hoboken Camera Club, Peekskill Camera Club, Brooklyn Academy of Photography, Photographic Section of the Brooklyn Institute, Washington Camera Club, Albany Camera Club, Cincinnati Camera Club, Postal Photographic Club, and Lynn Camera Club, assembled at 10.30 A.M., Thursday, December 4th, at the rooms of the Society of Amateur Photographers, 113 West Thirty-Eighth Street, New York. The assembly was welcomed by James H. Stebbins, Jr., the President of the Society, who offered the freedom of the rooms to the delegates.

Mr. Arthur Yates, President of the Syracuse Club, was nominated as temporary chairman, but owing to illness, declined, and amended the motion by nominating Mr. F. C. Beach, who was elected. Mr. Wallace Dickson was elected temporary Secretary. The roll was next called, showing twenty-two delegates as being present.

Mr. Dickson then read the call of the meeting, which was the same as the letter published in the November number of the magazine. In addition to the societies previously mentioned, letters of encouragement and promise of support had been received from several other societies.

After the call had been read, Mr. Henry J. Newton called the Secretary's attention to the omission of Mr. C. Van Brunt's name as a delegate from the Photo Section of the American Institute. The Secretary acknowledged his mistake, and was advised to write an explanation to Mr. Van Brunt.

Mr. Beckers proposed that stereoscopic photography be included as one of the branches the association should foster. The chairman called on Dr. Van De Warker to explain the purposes of the proposed association. The Doctor said: "Gentlemen and Delegates,—In the first place, knowing, as we do, the history of photography, you are well aware of the important role that has been played by the amateur in its development. What we have to-day of this beautiful art is indebted in no sense scarcely to the tradesman, but in every sense to the scientific, enthusiastic, and intelligent amateur.

That being the case, it has occurred to me repeatedly that it would be an important matter to have a national association of those interested in photographic work, aside from its commercial relations. I felt that all the more keenly from my own experience as a club man, my interest, in a measure, was cemented, and I was kept up to a certain level of working efficiency by my association with my friends and fellow-workers in the club-room. That being the case, then, it occurred further that the same spirit could be carried out in the broad field of a national association; and that thought wandered in my mind for a long time, and I saw that such a scheme was on foot in France.

On the spur of the moment, the first call, imperfect and hasty as it was, was issued at my suggestion by the Syracuse Camera Club.

After I had identified the club in that way with the idea, I learned that it was not an original idea with me by any means; but that many other gentlemen had thought of the same thing, and some were almost on the eve of taking active measures to launch such a scheme. Among them, Mr. Bullock had thought of it, and I do not know but had largely matured a plan for such an organization.

I can not see anything but good will result from the national organization of the amateurs of America. I think, without any captious spirit whatever, it is safe to say that

to those who have organized here in the spirit of trade and trade competition, photography owes no debt. But photography is indebted to the amateur; and I do believe that if this enterprise is successful, and brings within its field all the best spirit that is engaged in work of a non-commercial character, that it will have an important influence (spreading in every direction in all the collateral branches that are associated under the broad term, photography,) for the better. And with that end in view I have earnestly worked, and so have the gentlemen associated with me in the matter. It has been a matter of business as well as a matter of love.

And now, sir, that we may have something to talk about in this connection, I move, sir, that it is the sense of this meeting that it is desirable to form a national association of photographic amateurs. The motion was carried without a dissenting vote. Mr. Newton thought the vote called for the formation of a temporary national organization and wanted "temporary" stricken out. But the chair ruled that he was mistaken, that it was simply the sense of the meeting that an association be formed.

Mr. Edmund Stirling, representing the Photographic Society of Philadelphia, said: "It is a serious question in my mind whether it is competent for this body to effect anything more than to form a preliminary organization, and at this time I want to make a statement to define my position here, so that in the future there shall be no misunderstanding. The call that came was addressed to the Amateur Photographers' Club of Philadelphia. The President of the Photographic Society wrote to the President of the Syracuse Camera Club, from whom the language came, and received an answer from Mr. Dickson, stating that, while the call was addressed to amateurs, it was not intended to exclude the Photographic Society of Philadelphia. The Photographic Society of Philadelphia is in no sense an amateur or a professional organization. Its charter says it is formed to promote the interests of photography, and in that society the line between amateurs and professionals has never been drawn. Its officers include both; some of the professionals are as enthusiastic amateurs (if you will pardon the paradox) as the amateurs themselves.

The Photographic Society sent me over here, not wishing to hold aloof from any movement which would promise to promote the interests of photography. It did not send a delegate with any powers to unite with the organization or the formation of a permanent association of any sort; and I think it is proper that I should state that, so that I should not be under any false colors, or that the Photographic Society of Philadelphia, in sending delegates, should be misunderstood.

Mr. T. J. Burton moved that a special committee of five be appointed by the chair to consider a proposed Constitution and By-Laws and suggest a list of gentlemen that are willing to serve as officers. The chair appointed Dr. Van De Warker, Mr. T. J. Burton, Mr. George Bullock, Mr. Randall Spaulding, and Mr. A. J. Thomas. The committee retired and a recess of three-quarters of an hour was taken.

When the meeting re-convened, the chairman remarked that informal discussion was allowable until the committee was ready to report.

Mr. H. J. Newton said: "I presume there are those here who could explain to the meeting what is required to make a person eligible to be a member of this proposed organization. We have an immense field to draw from, and there are large numbers who do not belong to any organization of amateur photographers. How are they to be reached, and are such eligible? Those are questions, I presume, that others would like to know about; I suppose something about it will be in the proposed Constitution and By-Laws.

Mr. A. L. Simmon thought no distinction should be made, that any one should be eligible whether a professional or amateur.

Mr. Wallace Dickson said in explanation that one of the features in the formation of the organization was to be the introduction of two classes of members, delegate members representing clubs, and permanent members, representing individuals that are not connected with clubs. By making the institution to be controlled exclusively by delegates from clubs, the organization will rest in the hands of the organized clubs, but the membership will consist of two classes, delegates from clubs, and permanent members, who are outside of club organization.

The committee on organization then reported the draft of a Constitution and By-Laws

which it approved, naming the new organization "The American Photographic Conference." After slight amendment the whole was adopted. (A copy of the Constitution will appear in the next number.)

After the passing of the Constitution and By-Laws the committee was authorized to fix a place for the first annual Conference, and also to name the officers and council. A second recess was taken of twenty minutes. When the meeting re-convened the chairman stated that an invitation was extended by President A. J. Thomas of the Hoboken Camera Club to the delegates to attend a reception and entertainment at Odd Fellows Hall, in Hoboken that evening, also that a cordial invitation was extended by the Board of Directors and officers of the Society of Amateur Photographers to spend the evening at the rooms with them.

The committee reported that it favored holding the first annual Conference in New York on the third Tuesday of April, 1891, and recommended the following officers and council: President, Dr. Ely Van De Warker of the Syracuse Camera Club; First Vice-President, George Bullock of the Cincinnati Camera Club; Second Vice-President, Dr. George L. Parmele of the Camera Club of Hartford; Secretary, T. J. Burton of the Society of Amateur Photographers of this city; Treasurer, W. H. Drew of the Boston Camera Club; Members of the Council, R. Dickinson Jewett of Washington, F. C. Beach of New York, Prof. Randall Spaulding of the Postal Photographic Society, Prof. Edward Weston of Newark, N. J., Harry S. Fowler of Brooklyn, John V. Pruyn of Albany, Robert S. Redfield of Philadelphia, Cornelius Van Brunt of the Photographic Section of the American Institute, A. J. Thomas of the Hoboken Camera Club, and J. W. Alexander of the Yonkers Camera Club. On motion the report of the committee was adopted, and the nominees were declared elected.

Mr. Beach then invited the first President of the Conference to take the chair, and in doing so Dr. Van De Warker said: "Gentlemen and Ladies,—I little expected when I began this movement on the part of the Syracuse Camera Club, that such an honor as this would fall to my lot, and I think now the delegates have been a little imprudent in their choice. I hardly feel that I can do as well for the interests of the association, the importance of which I may overestimate, but I hardly feel that I do, in your selecting a man so little known as myself in photography. I see so many other names that are prominent in the ranks of amateurs, I see so many others who turn out perfect work, that I feel very modest about this matter; but I thank you for the honor, and I assure you that my best efforts shall be put into this enterprise. As I stated to you, this matter has been a labor of love, and so it has; and I shall make it a matter of business, as well as love, and do the best I can. I thank you for the honor you have conferred upon me." [Applause.]

Mr. Bullock suggested that all present in the room apply for membership in the new organization.

On motion of Professor Weston a vote of thanks was extended to the Society of Amateur Photographers for the entertainment and facilities that had been placed at the disposal of the delegates. At shortly after two o'clock, on motion of Mr. Beach, the Conference adjourned to 10.30 A. M., Tuesday, April 21, 1891, to meet in New York.

The following is a list of the delegates who were present: Arthur I. Yates, Wallace Dickson, Dr. Ely Van De Warker representing the *Syracuse Camera Club*; James H. Stebbins, Jr., A. L. Simpson, T. J. Burton, F. C. Beach (D. H. Walker, not present,) representing the *Society of Amateur Photographers of New York*; Edmund Stirling (Charles L. Mitchell, not present,) representing the *Photographic Society of Philadelphia*; Edward A. Andrews and W. H. Drew representing the *Boston Camera Club*; Mr. Drew also represented the *Lynn Camera Club*; Dr. George L. Parmele representing the *Camera Club of Hartford*; R. Dickinson Jewett representing the *Washington, D. C., Camera Club*; A. J. Thomas and Alexander Beckers representing the *Hoboken Camera Club*; Harry S. Fowler (William Arnold, Dr. J. H. Raymond, not present,) representing the *Brooklyn Academy of Photography*; Randall Spaulding representing the *Postal Photographic Club*; H. J. Newton and Cornelius Van Brunt representing the *Photographic Section of the American Institute*; J. W. Alexander and F. W. B. Eschmann representing the *Yonkers Camera Club*; William A. Halsey, Professor Edward Weston, Frederick G. Ageus, and C. J. Hine representing the *Newark Camera Club*; Edward F. Hill (Dr. R. H. Mason, F. H. Southard, not present,)

representing the *Peekskill Camera Club*; George Bullock, representing the *Cincinnati Camera Club*, and the *Photographic Section of the Cincinnati Society of Natural History*. Other associations which elected delegates who were not present were: *Old Colony Camera Club*, H. W. Studley; *Providence Camera Club*, William M. Coop; *Photographic Association of Brooklyn*, Dr. E. H. Riedel; *Albany Camera Club*, John V. L. Pruyn; *New Orleans Camera Club*, H. T. Howard, Dr. William R. Mandeville.

The *Adrian Scientific Society of Adrian, Michigan*, sympathized with the movement, but was unable to send a delegate. It strongly advised an official journal, in which the proceedings of the association should be published. The *New York Camera Club* reported that no action could be taken by it on the call until its next business meeting in January. The *Waterbury Camera Club* promised aid to the movement, as did also the *Mystic Camera Club*, of Medford, Mass. The *Columbus (Ohio) Camera Club* favored the idea of a national association.

Members of the *New York Society* had been invited to attend. Among those present we noticed Miss Catherine W. Barnes, Miss E. A. Slade, and another lady visitor. The ladies thought they should have been represented in such an important organization. The best of feeling appeared to prevail, and the interest shown augured well for the future prospects of the Conference. At the close of the meeting all those present signed their names to the Constitution, and paid the \$3 fee required by the By-Laws, with a willingness which soon placed in the hands of the Treasurer an amount not far from \$100. A meeting of the Council was called at four o'clock in the afternoon to organize and adopt measures for making the April Conference a success.

It was voted that a large edition of the Constitution and By-Laws be printed and sent to the several clubs throughout the country; that the transactions of the meeting also be printed; that application blanks, and a circular explaining the mode of joining the Conference be printed; that an exhibition of photographs to be entirely the work of members be held one week in New York during the Conference; that the local committee in New York be empowered to arrange all the details for the Conference and exhibitions; that the Conference become incorporated; that an official seal be adopted; that a banquet be held on the evening of April 22, 1891; that all persons joining the Conference prior to April 21st meeting, be known as *founder members*.

A special committee on papers and publications was appointed, consisting of George Bullock, R. Dickinson Jewett, and F. C. Beach, whose duties are to edit the transactions of the Conference, and solicit papers to be read. All papers, approved, are to be printed, and slips given to members of the Conference the day previous to being read. The council adjourned to meet in New York, about the middle of February.

In the evening the delegates and friends were entertained by lantern slides by English amateurs being thrown on the screen, and afterwards adjourned to the work-room of the society, where, on a large table, substantial and palatable refreshments were provided, interspersed with numerous photographic puns. There was also a goodly supply of the No. 4 developer intended to be tested by being taken internally. Thus the day ended, it is hoped with pleasure to the delegates, and satisfaction to the promoters, that the plan of an American Photographic Conference is to be a probable success, and the means of encouraging a stronger fraternal feeling among the numerous photographic clubs and societies.

[The dues for delegate and subscribing members are fixed at \$3 a year. Constitutions will be sent and other information given by addressing the Secretary, Mr. T. J. Burton, 113 West 38th Street, New York.]

The Society of Amateur Photographers of New York, 113 West 38th St., N. Y.—Friday, December 5th, an exhibition of lantern slides, mostly the work of members, was given, and largely attended. The pictures were those selected by the interchange committee to represent the society in this year's interchange. Several slides by Mr. C. C. Roumage, of New York Streets, the "Swimmers," "Feeding Sheep," and "Rockaway Falls at Boonton, New Jersey," were remarkably good specimens of dry plate work. A few slides of English streets and of English cottages and church ruins, by Mr. Dexter H. Walker, were greatly appreciated. "Crossing the Ford, at Luray, Virginia," by J. S. Bussing, was an effective study. Mr. E. D. Gardner had four interesting slides, one, "I see Happy," a figure study,

was well conceived, and a most charming landscape was "Mount Sebatis, Long Lake, Adirondacks." Several slides of natural subjects, such as "Ferns," "Potato in Blossom," "Purple Fringed Orchids," by Dr. E. C. Bolles, were charming and novel studies, and his two pictures of "Surf" at Portland, Maine, were strikingly realistic. In Mr. D. K. Young's contribution the picture of the "Ferry on French Broad River" was most admired. Mr. G. W. Wundrum had an interesting study of "Pigs" and also of "Coney Island Bathers."

A photograph of "Barye's Lion," in the Metropolitan Museum of Art, by Mr. Charles Balliard, was very striking. Mr. F. Vilmar had a view of a street in Wilkesbarre, after a cyclone, showing great destruction of property, while Mr. C. S. McKune had a creditable picture of the "Relief Guard in the Seventh Regiment when at camp."

A yacht dashing at full speed called the "Lyris," by Mr. F. Ruppert, was excellently done.

Mr. E. Warrin contributed interesting slides illustrating scenes along the wharfs of New York, and of the yard of the Grand Central Depot. Mr. William M. Murray had some charming views in the Adirondacks and on Lake George. Miss C. W. Barnes' three "Enoch Arden" slides were shown and were very much liked. They will supply a good example of group composition to the amateurs interested in that direction.

Mr. R. A. B. Dayton contributed one slide called "From the Old Country," showing two immigrants in conversation in front of a steamship wharf, which was very amusing.

Mr. A. L. Simpson supplied interesting views in Paris, and of New York steam fire engines that were appreciated. The artistic and beautiful slides by Mr. W. B. Post, embracing portraits, animal studies, and landscapes, were greatly admired, and will be regarded as containing some of the gems of the collection. He is one of the most prolific and careful slide makers in the society.

Following his views, Mr. G. P. D. Townsend, a new member of the society, showed between thirty and forty slides of Colorado and New Mexico scenery, explaining very entertainingly the interesting points of each. He said the New Mexico Indians were especially wary about the camera, and to avoid danger it was necessary to conceal the machine under a blanket, taking the pictures without their knowledge. The lantern was operated by Mr. A. G. Tisdell and Mr. A. Shoen. Mr. F. C. Beach read the titles of the pictures.

December 9th was the regular monthly meeting of the society, making the second that was presided over by President Stebbins since his election in April. President Stebbins having returned from his European trip, considerably improved in health, called the meeting to order at 8.30 and exhibited a variety of novelties which he saw in France and Germany. A rocking device made out of pasteboard, for rocking plates was shown. In crossing the ocean he found the awning over the deck of the steamer considerably interfered with the taking of good instantaneous views of life as it appeared to him.

In France the first place he visited was Entretat, which is a paradise for the photographer, especially those fond of fishing scenes. The place had between two and three thousand inhabitants. He took two hundred views of the boats, scenery, high cliffs, etc. Developed a few at first to see that he was right. He had a good light; used his lens stopped down to f-15, with a quick shutter most of the time. In Paris the light was not as good as at the sea-shore; used full aperture or f-7 and f-11 in the streets. He noticed a number of new magazine hand cameras, all of which required that the plates first be put in metal holders before being loaded in the camera. As a rule the cameras were not as perfect as they might be. He saw in Paris lenses with aluminium mounts, which lightened their weight astonishingly, and another lens so fixed that lenses of different focal lengths could be adjusted to it. He saw also a Pocket Book Camera and a Book Camera, having an automatic shutter, which was always set. Another camera was in the form of a watch. He exhibited a very neat little flash light, to be carried in the pocket, which was simple yet very effective. It could be re-charged very rapidly. He tried a Tisdell & Whittelsey candle lamp, but found the heat melted the tallow so that it would run down and out of the lamp. He ran across a portable ruby kerosene lamp, which, though small, was safe and lasted for three hours at one filling. He showed specimens of different papers, some for transferring like the carbon process, and others transparent (ferro prussiate), designed to be pasted on glass.

Two different kinds of actinometers were shown to tell how long to print the carbon pictures.

He found sensitized silk was prepared and sold which was capable of making quite artistic prints. It is sensitized with a citrate of silver solution. He showed specimen prints made by himself. A peculiar finder was exhibited having a stereoscopic lens and mirror fixed at 45 degrees, which reversed the image making it appear in the natural position. He showed a Prazmowski lens which he ascertained was remarkable for its covering powers and its wide angle. A very small lens would perfectly cover a large plate.

From Paris he went to Berlin; there it was cloudy most of the time, and very poor weather for instantaneous work. He discovered in Berlin a new pneumatic focusing glass which, when pressed against the glass at any desired point, retained its position. It could be easily removed. He saw a combination silver and platinotype paper, which prints like silver paper, but is toned with a platinum solution. A novelty shown in tripods was in the form of an umbrella; it was painted black and resembled an umbrella perfectly, and had a hooked-shaped handle, which was detached when it was opened out and set up. It was very compact, light, and strong.

At the conclusion of his remarks the meeting went into executive session. A communication from Mr. F. Ruppert, resigning his position as Director, was read and accepted. Mr. W. F. Hapgood, the editor of the *Journal of the Society*, was elected to fill the vacancy.

Mr. F. C. Beach reported on behalf of the delegates, appointed by the society, to attend the Conference on December 4th, that a preliminary meeting had been held, was well attended, and that a Constitution and By-Laws were adopted, and a permanent organization effected, which included Mr. T. J. Burton as Secretary, and himself as a member of the council, and also a member on the committee on Papers. Dr. Ely Van De Warker, of Syracuse, was elected President. The organization was to be known as "*The American Photographic Conference*." He urged the members of the society to enter into it heartily, stating that it was to be a national affair, and one worthy of being encouraged.

The balance of the meeting was occupied in the passing of a new (the fourth) Constitution since the society came into existence, March, 1884, or, on an average, a new Constitution for each one and one-half years. This time a class of membership, called corresponding members, is abolished, there being now but three classes, Active, Subscribing, and Honorary. Any one, whether amateur or professional, residing out of the city may become subscribing members and have many privileges but not the right to vote. The annual dues for this class is ten dollars. Other provisions prescribe more clearly the duties of officers and committees. Altogether it is a better arranged and more clearly stated Constitution than any the society has heretofore had. Mr. R. A. B. Dayton was the author, and was honored with a vote of thanks.

December 20th. Smoking Concert.—The affair was very successful. The entertainment comprised lantern slides, music, sleight-of-hand tricks, good story-telling, and a plentiful repast, and was kept up till a late hour. It was greatly enjoyed by the participants.

December 26th. Exhibition of Lantern Slides.—The regular monthly exhibition of slides took place on Friday evening, the night of the big snow storm. An audience about half the usual size, including half a dozen ladies, listened appreciatively to Mr. William M. Murray, as he described the views of "*Illustrated Chicago*," by the Chicago Camera Club, when they were thrown on the screen. The club had prepared a lecture on "*Chicago: Historical, Picturesque, and Architectural*." Much of the lecture dwelt on the dimensions of the buildings and the extent of Chicago's industries. Only slides of merit and of special interest were shown. Instead of reading the lecture complete, Mr. Murray read parts to correspond to the views. Maps of early Chicago, including copies of early pictures were shown. Other views covered Chicago before the fire, picturesque surf pictures along the shore and parks, many of the tall buildings, some of the principal streets, the great stock yards, a number of the public buildings and monuments, and views in the different parks, which were the most artistic and interesting. A photograph of Libby Prison, as removed to and restored at Chicago, was quite interesting. The square inclosing it is built of granite, something like the parapet of a castle. The quality of the slides was not up to the standard of the Interchange slides. However, the interesting facts given with the pictures

presented to the observer a very good idea of some of the chief characteristics of the Queen City of the West. The World's Fair in 1893 came in for a display towards the end.

Following the Chicago club's set of slides were shown the 1890-91 selected set by the Syracuse Camera Club, and were greatly liked. Mr. A. P. Yates, the President of the club, contributed a number of beautiful and well-selected slides; foreign views by Mr. John Winter were very well liked. "Resting by the Roadside," by Mr. Wallace Dickson was a very pretty landscape study. Views of the Syracuse salt works were interesting. "Willow Glen," at Skaneateles, N. Y., by Dr. Clarke, was a beautiful tree picture. "American Falls, Niagara," by Mr. E. C. Howe, was an excellent slide of a most difficult subject. There were many other views of interest; altogether the collection reflects quite favorably on the club, and will accompany very appropriately the set of slides by the New York society on the rounds of the Interchange.

New York Camera Club.—Informal meetings are held on Monday evenings. A special meeting was held on Thursday evening, December 18th, at which Prof. James E. Keeler of the Lick Observatory gave a lecture on "Astronomical Photography." From the *New York Times* we quote an interesting account of what was said:

"Prof. Keeler said that astronomical photography presented few difficulties and that more knowledge of astronomy was required than of photography by the observer; in other words, that the ratio between the two was about three parts of astronomy to one part of photography. If, however, a photographer should attempt to photograph a star he would find that his image would be blurred, owing to the movement of the object during the exposure, therefore it was necessary that the instrument must be kept in motion in keeping with the motion of the star, and the apparatus for photographing stars, therefore, adjusted to meet these difficulties. The usual method of keeping the star on the plate in photographing was by moving the telescope, but owing to the size of the instrument at the Lick Observatory this was impossible, as the telescope weighed seven tons. The plan adopted, therefore, was to make the plate movable by means of turning screws.

"When the photographer wished to do some of his work the thing first to be done was to move the big telescope so that a lens could be capped over the end. It is necessary to put on a different lens for photographic purposes, and it happens that a different focus is obtained in the big telescope. The dry plate is therefore placed in the tube nine feet from the eye piece, a hole having been cut in it for that purpose. A Seed-26-plate is used, and for development the ordinary pyro and potash. The developer is used very weak and plenty of time given to bring out the image. When the plate is developed the operator has to go it in a blind sort of fashion, as the smaller star images will not appear till the developing work is done.

"Smaller stars than can be seen with the naked eye are located on the dry plate and brought out by development. This is owing to the fact that the effect to the eye in looking at a star is immediate, and the light seen as sharp as is possible, but when the rays are directed on a plate the light is cumulative and increases on the image till enough light is gained to fix the star, and of course on development it is brought out clearly. The clear air at Mount Hamilton makes it more desirable for the uses of photography, and many pictures are taken there. They are mostly small stars, however, and the photographs are made for the purpose of measurements. The photographs of the planets are more difficult to secure to good advantage and are not so useful as the drawings. The reason is owing to the refraction in the atmosphere. Some fairly-good pictures have, however, been made of Jupiter and Saturn, and this winter pictures of Mars will be taken.

"Prof. Keeler showed pictures of the planets and the moon, as well as drawings to illustrate the difference between the two. The outer ring of Saturn, which was not discovered till the big Lick telescope was turned on the planet, does not show in the photograph. The pictures of the Milky Way, which Prof. Keeler has in his collection of lantern slides, are most excellent, and are the best ever taken. The hundreds of stars shown on the picture are none of them visible to the naked eye. Another interesting series were photographs of the corona of the sun taken during eclipses. One, in particular, showed the peculiar rays of the corona noticed last year in South America.

"The photographs of the planet Jupiter showed plainly the different positions of the

spots and bands on the surface of the planet which demonstrate that they are constantly changing and that probably the surface of Jupiter is a mass of changing matter. Moon pictures thrown on the screen were as excellent as any that have been made. Prof. Draper of this city took the first moon picture in 1840, and thousands taken since, while of course much better, owing to the primitive state of photography in those days, have not practically, from an astronomic standpoint, been of much aid. The best of the moon and planet pictures, however, give about the same appearance that would be given through a telescope about half the size of the one used in making the photographic specimen.

"It took Dr. Draper twenty minutes to get his picture of the moon by the old daguerreo-type process. Indeed, it is said that Daguerre himself made an unsuccessful attempt to secure a picture of the moon. George Bond of Harvard College, ten years later, made some very excellent pictures of the moon. The discovery of the collodion process aided in making star photography more successful.

"It is a well-known fact that better photos are obtained through the smaller telescopes than through the big ones. Photographing stars, especially the small ones, is tedious work, as in some cases the exposure must last for several hours. During all that time the plate or telescope must be moved so that the image of the star will continue in one place. The exposure for a star of the sixteenth magnitude is two hours, and only one at a time can be secured unless the stars happen to be of the same magnitude, so that getting clusters is particularly long and tedious in its operation.

"In procuring the photographic star pictures, often what is known as the trailing process is followed, that is, the plate is exposed to the star, and then no attempt is made to fix the image in one place, but it passes along over the plate, making a trail. A number of trails can, of course, be got on one plate, and then be studied out and measured afterward. The exposures for planets are short—that of a sun spot taken in Paris was about as lightning-like as possible, the shutter being attached to the strongest kind of a spring. The exposure for the moon takes about a quarter of a second, and that for Jupiter about four seconds.

"People who visit the Lick Observatory often ask very remarkable questions in regard to the telescope, as well as to the methods of photographing the stars. The covering of the observatory is made of three-inch steel plates, and, of course, is arranged so that a plate can be moved to allow the telescope to point to any part of the heavens. A visitor who happened into the observatory, when all the plates were closed, asked most earnestly if the steel plates were transparent. A frequent question asked in regard to star photographing is if a flash light is not used to make the exposure. There is an old saying that intelligent men are the first to lose their wits when entering an astronomical observatory, and seem to forget the simplest laws. Many cases of this have been noticed at the Lick institution."

Postal Photographic Club.—This little club, which is limited to thirty members, still continues in a flourishing condition, under its able President and Secretary, Mr. Randall Spaulding and Dr. J. Max Mueller.

The November and July Albums, with their note-books, have lately passed through our hands. From the latter we find Mr. Hansmann has won in the July Album the first prize, both for artistic and technical merit, and any one who has seen his beautiful "Cloud Study" will agree that he well deserved them.

In the November Album, in our opinion, No. 80, "A Sunny Kitchen," by Miss Eddy, ranks the best for artistic merit, and No. 69, "Portrait of W. D. Howell," by Mr. Chase, for technical work.

Among the eighty-six photographs exhibited in this Album, those especially deserving of praise are: Three fine surf views at Block Island, by Mr. Prentiss, one of which is so especially good that, as a member of the club remarks, "Can hear the boom!"

Mr. Hansmann is represented by two excellent sepia platinotypes. One can always count on Mr. Hansmann for fine platinum prints.

On the first page of the Album we find a pretty bit by Miss Clarkson, "The Old Story," in which a young couple are seen courting over a gate, and making the most of the sunset hour.

Miss Gillender, who may always be relied upon for good work, gives us a very pretty thing in No. 9, "A Wash-tub Reverie." The pose of the figure in this is excellent. Mr.

W. H. Walmsley, noted in the club for his beautiful bromide prints, sends us this month a tasty little view in a silver print, entitled, "At the Ford."

Another charming landscape, so soft and atmospheric that one would almost imagine it to be taken from an oil painting, is "West Entrance to S. O. Field Club House," by Mr. Martin. From Mr. Graves we have two fine photogravures, which some of us may remember having seen in the *Photographic Times*. "Palm House" and "Road and River" are the titles.

Mr. J. M. Walmsley, who has given us so many interesting scenes of camp life at Lake George, has done it this time most certainly in "Who is Who?" A rear view, which represents ten young men, all standing with their backs toward the camera and who are dressed so much alike that even if one knew them it would indeed be hard to tell "Who is Who."

"The Garden Gate," by Miss E. P. Needles, the two hunting scenes, by Dr. Mueller, and four foreign views, by Mr. Spaulding, are also well worthy of mention.

THE REAL AND THE IDEAL.

The interest taken in Miss Barnes's remarks on the different phases of photography was especially marked at the meeting of the Photographic Section of the Brooklyn Institute in December, by a large and appreciative audience. We give herewith reports of the meeting from the Brooklyn journals. The *Brooklyn Times* said: "A regular meeting of the Photographic Department of the Brooklyn Institute was held last evening in the rooms of the Young Men's Christian Association, Fulton Street, President Black in the chair. The department is preparing for a print exhibition in the spring, and is otherwise displaying much activity, notwithstanding the fact that the fire at the Institute Building has temporarily interfered with the 'dark-room' operations of the society.

"The special paper at last night's meeting was on 'The Real and the Ideal' in photographic art, which was read by Miss Catherine Weed Barnes, of Albany, one of the editors of the *AMERICAN AMATEUR PHOTOGRAPHER*, and a very successful *connoisseur* in the field of photography. Miss Barnes advocated high ideals in photography and justly rebuked those who are inclined to make an insignificant toy of the camera, without thinking that admirable results are only to be had by the exercise of the utmost patience and application. Miss Barnes remarked that 'what is real to one is another's ideal, and, besides our mental focus is constantly changing, the real and the ideal are interchangeable and, as the latter constantly escapes us, so the former is never our own, for with every human being there is a new way of looking at a subject. In camera work the ideal of to-day becomes the real of to-morrow until it grows so old that it is young again and appears as a new discovery. How can we call photography a new thing when in Assyrian ruins is found what might be called the germ of the modern photographic lens? But the world moves fast in this nineteenth century, and the last decade has witnessed progress in camera work alone which would not have been believed possible when Daguerre, Talbot, and other pioneers dug the furrows where modern photography germinated and is growing to perfection.'

"Speaking of portrait studies and figure compositions, Miss Barnes said: 'A fancy photograph is not a portrait, any more than a fancy painting, and the photographer in this work is just as much at liberty as the painter to carry out his artistic taste, but, while he cannot make such decided alterations in his model as the painter, I hold he is entitled to use any and every means in his power to make his picture a success. A painter often alters entire features in a face, or decidedly changes the figure, and that is considered perfectly allowable. In purely fancy work the photographer should be permitted the same privilege without question, but with portraits, pure and simple, the likeness should be thought of first; that is, then, the main thing. This is a matter which demands consideration, now the camera is entering on the broad field of work once thought beyond its province—book illustration. Do not, my fellow-workers, allow the camera to be undervalued any more than the palette and brush. In laying the latter aside I did not consider that I was entering on a lower branch of work, that the one was any more art than the other.' Miss Barnes finds photography 'like an enchanted garden, where one is continually meeting the unexpected and wonderful.' The speaker urged severe study of the practical elements as well as a realization of true sentiment and the higher requirements of art.

"Following was an exhibition, by the aid of the lantern, of some of Miss Barnes's most interesting photographs, including the 'Enoch Arden' pictures, so widely praised.

Many other beautiful photographs by members of the department were shown upon the screen, and the meeting closed with an informal social conference."

The *Brooklyn Citizen* said: "The monthly meeting of the department of photography of the Brooklyn Institute was held in the class-room of the Young Men's Christian Association, 502 Fulton Street, last evening, about two hundred being present. President Alexander Black presided. Secretary Gould W. Hart recorded. During the short business session the matter of making a collection of photographic stereopticon slides to be sent out over the country for exhibition came up. Dr. Lewis E. Meeker, chairman of the committee, reported that the committee was working along bravely, and that so far, two contributions had been received from the members of the department. Dr. Meeker, who is a man of hustling abilities, evidently did not like this and expressed very plainly that if the department did not help finish the collection during the next decade the committee would consider the contract void. Dr. Meeker was pacified with promises of immediate relief, and President Black introduced at length Miss Catherine Weed Barnes, of Albany, N. Y., said to be one of the finest amateur photographers in the country. She spoke on 'The Real and the Ideal in Photographic Art.' What is real in art to one, Miss Barnes said, is the ideal of another and *vice versa*. They are interchangeable. In camera work what appears the ideal to-day becomes the real to-morrow, and then common-place where it so remains, until brought to the fore again when it is once more the ideal. The time is fast going, the lecturer claimed, when it will be considered lunacy to undertake amateur photography. There are a class of photographers who think that a snap camera is about the height of photographic ambition. This class, unfortunately, is numerous, and, what is worse, they are content with almost anything in the shape of a photo badly focused or otherwise. These, Miss Barnes claims, have their counterpart in the daubers in art. Miss Barnes takes the papers. What is more Miss Barnes keeps a scrap-book in which she inserts all cuttings from the aforesaid papers relating to the photographic art, and, occasionally, Miss Barnes reads her scrap-book and she is deeply pained to find among other scraps that there are some in which the funny man has laid hold of the art most beloved and dear to her, to wit, amateur photography, and her soul rises in indignation at the injustice. Amateur photography, according to Miss Barnes, is a thing most sacred. If your heretofore rational friend suddenly takes it into his head to purchase a snap camera and go prancing about like an idiot seeking what he may devour, from your choicest bric-a-brac to your own physiognomy, let him alone, he is in the pursuit of art and should by no means be hindered. Above all should he be free from the contaminating scribble of the newspaper reporter and the funny man. There is nothing funny about amateur photography, absolutely nothing. Miss Barnes closed her lecture with remarks on arranging subjects, developing negatives and printing them. After the lecture several fine photographs were shown by means of a stereopticon."

The Postal Photographic Club.—This club, whose membership is now full again, show by their December Album, which has just come to us, together with the August number, a marked improvement. Referring to this in his report the Secretary writes: "We have two exhibits in this Album which deserve more than passing notice. The first one is the "Christmas" exhibit of Miss Clarkson (by the way, the only one besides that of Mr. Le Breton). This exhibit, for artistic posing and technical excellence surpasses anything, in my opinion, we have had the pleasure to enjoy in any of the previous Albums. The other one is that of H. S. Phillips! Truly, our club shows a progress remarkable in its excellence." One of Mr. Le Breton's Christmas studies, that the Secretary refers to, occupies the first page in the Album. It is a fine California view, showing some of her noble trees on a river's bank, with a snow-capped mountain in the distance, and for which he has selected the beautiful and appropriate quotation, "Earth with her thousand voices praises God." Mr. Phillips's two portrait studies, which are also good studies in grouping, are very artistic; one represents "Four Generations," the other "The Bridesmaids." He tells us that in order to secure the white background in these, and which is so effective, he fastened a white sheet on the side of the house, stretching it until he obtained a perfectly smooth surface.

Perhaps what should have been mentioned first of all in this Album, especially for technical excellence, is a remarkable clever surf view by Mr. W. H. Prentiss. The light on the spray as the surf dashes against the rocks is a study for an artist. From Miss E. S. Needles we have a charming picture of "At the Well," in which we see the same young lady, who

posed for her, in the beautiful and highly artistic composition, called "The Wayside Fountain," which is reproduced in the *Times Annual* of 1891. Mr. E. H. Graves gives us two fine examples in platinum printing, and Miss Gillender three very pretty silver prints. There are many others whose work is well worthy of mention, especially the foreign views of Mr. Spaulding, "A Counterfeit Presentment," by Mr. Chase, and "Studio Artist," by the new member, Mr. Stanton, but space will not permit to do justice to all.

Those who received prizes in the August Album, were: Miss Gillender, on her beautiful platinotype, "When Spring Comes Laughing"; Mr. Graves, for "Entrance Llewellyn Park"; and Mr. Pulsford, for his artistic little bit, "Carrying Home the Milk."

Boston Camera Club.—Through the kindness of the New York Camera Club, the interesting exhibit of photo-mechanical prints recently on view in New York has been on exhibition at the rooms of the Boston Club, where it has attracted much favorable attention and comment. The exhibition was pleasantly opened to the public by an instructive talk on the various methods by Mr. Cocayne, who was followed by Mr. C. H. Currier in some of his always delightful recitations. Other exercises of a light and pleasing nature followed, and the entertainment closed with a lantern slide exhibition. Of the exhibition itself nothing but praise can be written. The exhibits, almost without exception, reach high water mark in illustrative methods, and they must have been a revelation to many of the artistic possibilities of the newer school of photographic illustration methods which has already assumed so prominent a position in book and magazine illustration.

The annual meeting of the club was held Monday evening, January 5th. Several important changes in the Constitution and By-Laws, proposed by Mr. Wm. G. Reed, were adopted, and the following officers elected for 1891: President, Henry N. Sweet; Vice-Presidents, Francis Blake, G. M. Morgan, and S. Henry Hooper; Secretary, Edward F. Wilder; Treasurer, F. Alcott Pratt; Librarian, John C. Lee; Executive Committee, the above-named officers and C. E. Davis, Jr., R. A. Bullock, John G. Hubbard, Chas. H. Currier, and O. A. Eames.

Various routine reports were read and accepted. After the business meeting, lunch was served in the studio.

California Camera Club.—A delightful entertainment was given by the club in Metropolitan Hall, San Francisco, Wednesday evening, December 3d, comprising an illustrated lecture, entitled "An Evening Among the Lowlands and Highlands of Scotland," kindly loaned by Dr. C. H. Steele, and recitals and music by Mrs. Henry P. Carleton, Miss Jessie Anderson, and Mr. H. J. Stewart, all of which were received with great enthusiasm by the large audience.

Hoboken Camera Club.—The second annual exhibition and reception held Thursday evening, December 4th, proved a most successful and enjoyable affair. The committee in charge worked most zealously to make the event a noteworthy one in the annals of the club, and the general sentiment was that they succeeded most signally. The programme was varied and entertaining, and included music, recitations, a lantern slide exhibit of Yosemite Valley and African views, and dancing. The rooms were tastefully decorated, and the walls were hung with prints made by members of the club.

At the recent annual competition, prizes were awarded as follows: Class A—1st, William Allen; 2d, Alex. Beckers; 3d, F. A. Muench. Class B—1st, Wm. Allen; 2d, F. A. Muench; 3d, Geo. H. Steljes. Class C—1st, F. A. Muench; 2d, Geo. H. Steljes; 3d, Wm. Allen.

The club has recently purchased a commodious and conveniently located building, which is now being remodeled into a club-house, with the intention of making it as completely and conveniently appointed as any club-rooms in the country.

The Photographic Society of Philadelphia.—An Exhibition of Photographs, by members of the society, is to be held between January 5th and 10th, from which "Honor Pictures" are to be selected. "Southern Germany and the Tyrol," by Dr. Charles L. Mitchell, is the title of an exhibition of lantern slides to be held January 8th, at the lecture room of the Franklin Institute. It will doubtless be very interesting.

Vienna International Photographic Exhibition.—An exhibition is to be held next spring, April 30 to May 31, 1891, under the patronage of Archduchess Maria Theresia. Photographs for the exhibition (which it is said will be very fine) should be sent before February 18, 1891, to Mr. Alfred Stieglitz, 14 East 60th Street, New York.

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BY DR. JOHN H. JANEWAY, U. S. A.

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ful. They are made of cloth, rubber, or leather, the latter being the most preferable for several reasons. The length when pulled out to its fullest extent should be at least three times the length of the base line (or longest side) of the plate for which the camera is intended. This will allow long focus lenses to be used, and the camera better adapted to enlarging, copying, etc. The inside of the bellows must be black and the body thick enough to prevent any ray of light penetrating through it. Care should be exercised to prevent any dust collecting in the interior; the very act of pulling or racking out would tend to disturb it, and thereby give rise to pin holes on the sensitive plate, or slow the lens by stopping the transmission of light, and by the dust particles reflecting light cause fog. Dusting out cannot be too frequently indulged in. As bellows can be procured from the dealers at a much less cost and better than the amateur can make them, therefore no direction for making them will be given here.

BENZENE OR BENZOLE— C_6H_6 = 78—Commercially benzole is obtained from coal tar oil, of which it is the most volatile constituent. It is a clear white solid which melts at $42^\circ F.$ to a clear limpid liquid having a peculiar and rather pleasant smell. It boils at $177^\circ F.$, and the vapor burns with a bright and smoky flame. Not soluble in water, but dissolves freely in alcohol, ether, and oil of turpentine. It is an excellent solvent for caoutchouc and gutta percha and dissolves fats and oil with great facility.

BENZOATE OF AMMONIA—Has again been revived as an ingredient of the toning bath, giving to albumen prints violet black tones. A good formula for the bath is:

Distilled water.....	100 parts.
Benzoate of ammonia	4 or 5 parts.
Chloride of gold.....	1 part.

This solution should stand at least twenty-four hours before using. It is a toning solution that is worth trying, especially by those amateurs who are unable to obtain anything darker than a brick red color on their albumen prints.

BENZOIC ACID— $C_6H_5CO_2H$ —Exists naturally in several balsams and gum resins. Prepared by sublimation or oxidation of a good many and variety of organic bodies. It melts at $248^\circ F.$, and sublimates at a little above that. Dissolves in about 200 parts of cold and 25 parts of boiling water, and with great facility in alcohol. As an addition

to the toning bath it gives beautiful warm violet tones. The following I have found good for this purpose :

Distilled water.....	1,000 c. c., 34 oz.
Soda carbonate.....	5 grammes, 1 dram, 17½ grs.
Acid, benzoic	10 grammes, 2 drams, 34½ grs.
Chloride of gold (brown), 1	gramme, 15½ grs.

The benzoic acid being lighter than water, therefore, it is necessary, by frequent shaking, to combine it with the other ingredients of the bath.

BERLIN PROCESS—Consists in coating the reverse side of a soft, thin, but full of detail, negative, with Hance's ground glass substitute, which gives extremely soft and beautiful prints.

BICHROMATE DISEASE—A troublesome and oftentimes serious disease affecting all parts of the body exposed to contact with bichromate of potash, either in the solid or liquid form. With the latter form contact with an abraded surface is followed by tingling or smarting, heat or soreness at some small spot on the finger or hand. Continued exposure by dipping the hand in a solution or handling the dry salt increases the effect and excoriation. Obstinate in their character appear these constitutional symptoms—eczema or psoriasis on the hands, in the flexures of the joints and in different parts of the body. Oftentimes boils, hard and painful and obstinately slow, make their appearance. Frequent crops of these appear without any apparent cause. The fine dust arising from the friction of the crystals inhaled by the nose or mouth, even in very minute quantities, often gives rise to a distressing and obstinate catarrh, and workmen in factories where the bichromate is manufactured have been known to lose the septum of the nose. The obstinacy of the disease is characteristic, and the person's life is rendered miserable for a long time by its persistency and liability to return. The greatest care is therefore necessary in handling this salt, whether in its dry state or in solution. In sensitizing one should always use India rubber gloves, and above all it is necessary to avoid all excesses in living. During development expose the hands as little as possible to the bichromate, especially so in winter, when the hands are liable to be chapped, for the poisonous action of the salt is rapid and disastrous. M. Beaumois, an operator of more than usual experience, recommends the daily use of the following mixture, which he employs with success upon his own hands :

Glycerine	½ oz.
Carbolic acid, c. p.....	10 drops
Water.....	2½ oz.

BICHRMATIZED GELATINE—Combining gelatine with a solution of bichromate of ammonia or potash, Poitevin discovered that gelatine treated with bichromate of potash lost its smelling properties after it had been subjected to the action of light, and that those parts not influenced by the action of light still retained them. This discovery of Poitevin was the beginning of modern heliography. In the last few years the processes founded on Poitevin's discovery have undergone many most important improvements, and numerous are the processes now in vogue. Consult "History and Handbook of Photography," by Gaston Tissandier; Vogel's "Progress," and Burton's "Photo-Mechanical Printing Processes," etc.

BICHLORIDE OF MERCURY— HgCl_2 —271—Well known as corrosive sublimate. Usually prepared by subliming a mixture of mercuric sulphate and common salt in equal parts and crystallizing. Colorless crystals, soluble in 15 parts of cold, and in 2 parts of hot water. The addition of a small quantity of ammonium chloride to the cold water increases its power to dissolve the mercuric salt. It is soluble in alcohol and ether, and is a violent poison. In photography corrosive sublimate is largely used to intensify thin negatives. The negative is soaked in a saturated solution until it turns white (owing to the formation of calomel— Hg_2Cl_2 —and the silver chloride), and then washed and placed in a bath of a weak solution of ammonia or strong sulphite of soda, etc., until it assumes a black color.

BICONCAVE—Lat. *bis*, and *concavo*, hollow—hollow on both sides. Frequently called double concave. Unlike double or biconvex lenses, biconcave have only virtual foci, whatever the distance of the object.

BICONVEX—Lat. *bis*, and *convexus*, to bring together—Lenses whose two surfaces are spherical. The centers of these surfaces are called centers of curvatures, and the right line which passes through these two centers is the principal axis. Biconvex lenses have the same kind of foci as concave mirrors, that is real and virtual foci.

BINOCULAR CAMERA—Stereoscopic cameras are sometimes so called.

BLACK PROCESS WITH IRON, COLAS'—Useful to produce a drawing on yellow tracing paper so as to give a more suitable copy to photograph from. Coat with a fine sponge a hard, well sized paper with water 300 parts, gelatine 10 parts, perchloride of iron (dry) 20 parts, tartaric acid 10 parts, persulphate of zinc 10 parts, and dry in a dark room. When dry expose the tracing until the greenish yellow tint of the paper has disappeared, except where covered by the

opaque lines. Development is effected in a bath made by dissolving 20 parts of gallic acid in 200 parts of alcohol and 1,000 parts of water. When developed wash in plenty of clear water.

BLACK AND WHITE NEGATIVES—Most of the mechanical printing processes require negatives of much greater density than is desirable or necessary in negatives used for printing on sensitized paper. Negatives known as black and white have all the detail of lines and letters reproduced with perfect sharpness, and the high lights so intensely black that the light is prevented from penetrating through on the bichromatized gelatine plate beneath. Until within a few years the operators of the wet collodion process denied that black and white negatives could be produced upon dry or gelatine plates. But that excellent negatives of this character have been made upon the dry plate cannot now be denied. For a concise treatment of this process consult Burbank's "Photographic Negative."

BLACK VARNISH—As has been stated before, asphaltum forms the basis of most of the black varnishes. But it has the decided disadvantage of dissolving when hypo is used. An inferior article, good when hypo is used, however, can be prepared by adding ivory black to an ordinary varnish.

BLACKING—The interiors of all cameras, dark slides and lens tubes require to be coated with a dead black to prevent reflection of light upon the sensitive plate, *thereby sometimes causing fog*. There are several methods for doing this. Grinding up with Japanese gold size, ivory or lamp black, or the soot formed by burning camphor, or lamp black in large quantities mixed with brown Japan and then properly diluted with turpentine, give a dead black. Coating the wood, etc., with a strong solution of sulphate of iron, and when dry brushing it over with a solution of tannin or a decoction of logwood. Several applications of these are sometimes required. For blacking lens mounts other methods are employed. Where it will not be touched by the fingers the best and most lasting method is by mixing fine lampblack with lacquer, and giving the heated mount two or three coats. When the mount is to be fingered, it can be dipped, when fairly hot, into a solution of nitrate of copper, made by dissolving copper wire in dilute nitric acid over a spirit lamp, the green color of the copper first showing, but at the proper temperature a fine dead black color appears, or by applying a mixture made of a 25 per cent. solution of chloride of platinum, one and a half drams, and two drams of the tincture of iron (U. S. P.), which will produce an intense dead black. It is necessary in both cases that the metal of the tube shall be free from dirt or grease. I might

mention here that the platinum mixture produces a very fine oxidizing effect upon silver, etc.

BLANCHARD'S BRUSH—Consists of a single strip of glass cut to any length or width desirable for the special purposes to which it is to be applied, one or more thicknesses of Canton flannel or swan's down being then bent over the ends and secured in its place by an India rubber band. It was used for coating plates, etc., with the substratum in the collodion process.

BLEACHING PRINTS—Silver prints upon which a line drawing is to be made for the purpose of photo relief plates must be fixed, under all circumstances, in a pure hyposulphite of soda solution. A mere trace of gold will form the hyposulphite of gold, or, as it is called, sel d'or, which will in time, upon untuned prints, substitute a slight cuticle of gold for the silver. Bichloride of mercury does not attack a gilded photograph, nor does it bleach it. Should, unfortunately, the print become contaminated with the gold, the following may be pursued with every reason of bleaching the print to a perfect whiteness: Soak the print first in alcohol, then in an alcoholic solution of iodine, from which it is to be removed to a strong solution of cyanide of potassium to which alcohol is added in quantity as great as the solution will hold. Mr. F. C. Beach recommends that bromide prints, fixed or unfixed, be treated with the following solution, which, he says, will effectually and easily bleach them out: Bromide of copper solution, $\frac{1}{2}$ oz., hyposulphite of soda, 100 grains, alcohol, 1 oz., water, 2 oz. Alcohol is added to prevent the ink from spreading. The bromide of copper solution is made as follows: Sulphate of copper, 120 grains, water, 4 oz., bromide of potash, 120 grains, water, 4 oz. Mix the two solutions together, and the resulting solution of a bluish color is the bromide of copper.

BLISTERS—Have probably caused more vexation and called forth more hard words from both the amateur and professional than almost all the other troubles that beset his path. They are a fruitful subject for writers, and various are the preventives advocated. They appear in the negative film and on the sensitized paper. With gelatine plates they are rarely or never seen now, their place being filled with a still more serious and aggravated defect, frilling. That, fortunately, is also disappearing. The wet collodion process is also exempt, but the collodion emulsion process furnishes plates more or less liable to this trouble. On albumenized paper they seldom show themselves until the paper is removed from the hyposulphite fixing bath into the washing baths. Careful experiments have satisfacto-

rily shown that the cause here is an imperfect or irregular coagulation of that portion of the albumen which is immediately upon the paper, for when sheets were entirely immersed in the silver bath, instead of being floated on its surface, blisters did not occur. Neither did they when the whole layer of albumen was coagulated by being immersed in strong alcohol previous to being sensitized. Heavy glossed papers are notorious for their liability to blistering, more than others, for the thicker the layer of albumen, the more difficulty would there be for the silver solution in penetrating through the layers down to the surface of the paper. The non-appearance of blisters until the prints are removed from the hypo solution can be accounted for by the rapid interchange of fluids of different densities in the substance of the paper, which takes place in changing from the hypo to water. Hence as an excellent preventive it is wise to pass the prints from the fixing bath into a strong solution of common salt, and then gradually dilute that until the prints are completely washed. Debenham advises a weak fixing bath and plenty of time: 1 oz. of hypo to 1 pint of water (English 20 oz.), giving them one-half hour for fixing.

BLOCK PRINTING PROCESS—The problem whether it was possible to print by mechanical means from photographically prepared blocks engaged the minds of the earliest experimentalists, and the result has been that many processes of greater or less degree of perfection have been worked out. To produce two tones, white and black, as in the copy, the pen and ink drawing was a comparatively easy matter, but the great difficulty that presented itself was the production of half tone, and consequently all the intervening gradations. There are three general groups of blocks produced by photo-mechanical processes. First, those in which the parts of the blocks intended to print black are sunk, cut, or etched under the general surface, intaglio. In these the ink is first applied generally to the surface, it is then rubbed off the elevations and afterward extracted from the depressions by the paper, thus forming an image dark in proportion to the depth of the depressions. Second, processes in which the film is so treated that various parts of the surface differ in their capacity for absorbing greasy ink, or in repelling it, careful inking resulting in an image on the block of intensity ranging with the capacity of the different portions of the surface to absorb ink. Third, type blocks in which the elevations receive the ink which is afterward taken up by the paper, the half tones in such a case being produced by some sort of stipple lining and grain, as in various kinds of engraving. In groups one and two very careful inking up is required, and the production of proofs is necessarily slow.

(To be Continued.)

BOOKS AND EXCHANGES.

ANSFÜHRLICHES HANDBUCH DER PHOTOGRAPHIE, von Dr. Josef Maria Eder. Halle A. S. Wilhelm Knapp's Verlag; 1890.

Dr. Eder's name is well known as that of a careful experimenter in photography and the author of several important works on the science. The work now on our table is a revised edition of one published some years ago, and the prospectus of the book shows that it will cover the entire photographic field. The work will appear in forty parts, of which five have been published.

TRAITE ENCYCLOPEDIQUE DE PHOTOGRAPHIE, par M. C. Fabre. Paris: Gauthier-Villars et Fils; 1890. Dix-huitième fascicule.

The eighteenth part of Dr. Fabre's Encyclopedia discusses microscopical and astronomical photography in a complete and satisfactory manner.

THE AMERICAN ANNUAL OF PHOTOGRAPHY FOR 1891. C. W. Canfield, editor. New York: The Scovill & Adams Company; 1890. 50 cents and \$1.00.

The present issue of this popular annual well sustains the reputation of its predecessors. It contains 280 pages of interesting and helpful contributed articles, an unusually full assortment of formulas and tables, and a wealth of illustrations. The "Annual" has become a necessity to all progressive workers, and the present volume is no whit behind its predecessors in interest and value.

CARBON PRINTING. By Max Bolte. New York: E. & H. T. Anthony & Co.; 1890.

This little pamphlet of thirty-two pages, printed, we believe, from Anthony's *Photographic Bulletin*, forms a reliable guide to the method of printing in carbon, which deserves a wider practice among amateurs than it has yet enjoyed. Mr. Bolte is known as an experienced carbon worker, and he has the art, so little known or practiced by writers on photography, of seizing the essential points in a process and describing them clearly and intelligibly. The book is the best guide to the subject of which it treats now to be had.

The most beautiful frontispiece ever produced in an American magazine, appears in the January number of the *Cosmopolitan*. It is a reproduction in colors of François Flameng's famous picture, "The Cake Seller," and can scarcely be distinguished from the imported photogravure which is exhibited in the dealers' windows, at the price of \$7 a copy. It is one of the most charming of subjects, and is well worth framing and preservation. The *Cosmopolitan* has become noted of late for its frontispieces and this very much excels its previous efforts.

The number contains the first of two parts of Mrs. Van Rensselaer Cruger's new novel, "Mademoiselle Réséda," pronounced by critics who have read it the best of her works. Mrs. Cruger is a woman who is intimately acquainted with fashionable circles, both in this country and abroad. She writes in a realistic manner, without any of the offensiveness of the average realism. The next article in importance is from the pen of Miss Bisland, describing a visit to the People's Palace in London. A most interesting posthumous paper by F. O. C. Darley, with his own illustrations, is also given, a Becket's clever story, "Don Gracias," is illustrated in a novel manner, the well-known actors, Sothorn and Miss Harned, having consented to pose for the situations of the novel, the results being reproduced in photogravure.

PHOTOGRAPHIC MOSAICS. Edward L. Wilson: New York, 1891.

The twenty-seventh volume of this popular annual comes to us greatly enlarged and filled with papers of thoroughly practical character. The illustrations are more numerous and of a higher grade than in previous volumes, and there is a practical air about the book which makes it indispensable to every earnest worker. Where everything is good it is difficult to particularize, but we cannot refrain from congratulating the veteran editor on the extremely felicitous manner in which he has written up his summary of the year's progress in photography.

Outing for January well sustains the reputation of this popular monthly. It contains a

large amount of interesting illustrated matter, including the conclusion of W. I. Lincoln Adams's helpful paper on "Flash Light Photography."

SCIENTIFIC AMERICAN.—Every week this most valuable periodical presents whatever is new in the world of science, art, and manufactures. Full of practical information, it discloses to the thoughtful not only what has been ascertained, but also suggests the possibilities still to be revealed. For *forty-five years* Munn & Co. have conducted this paper in connection with the procuring of patents for new inventions. The *Scientific American* is authority on all scientific and mechanical subjects, and should be in every household. Copies of the paper may be seen at this office and subscriptions received.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

Wuestner's Orthochromatic Plates.—Ever since the discovery of the methods of making dry plates moderately correct in their monochromatic rendering of color values, the efforts of manufacturers have been largely directed towards the production of color-correct plates of a high degree of sensitiveness. To the best of our belief the new Wuestner orthochromatic plates are the first to combine the two essentials of speed and the correct rendering of color values, and this they do to a remarkable degree. We have recently had the pleasure of testing them under trying conditions against ordinary dry plates and the slower orthochromatic plates of other makes in the market. We found them appreciably more rapid than the latter and seemingly as good in their rendering of color values, and we therefore have no hesitation in recommending their use to those of our readers whose needs call for a rapid orthochromatic plate of the very highest degree of excellence.

Eikonogen Cartridges.—From the United States Supply Company we have received a sample of an eikonogen cartridge, about two and one-half inches long by one-half an inch in diameter, which contains the chemicals all mixed in a dry state to make ten ounces of developer. It is only necessary to break the cartridges in two at the middle and empty the contents into the water to form the developer. It is a very convenient form, especially for traveling and in cases where only a small quantity of developer is used at long intervals. It is said to keep perfectly.

United States Photographic Patents

Issued in October and November, 1890.

OCTOBER 7th.

- 437,843—Photographic Printing Frame. D. Bartlett, Elizabeth, N. J.
437,949—Mount for Photographs or other pictures. R. H. L. Talcott, Boston, Mass.

OCTOBER 14th.

- 438,261—Coin Operated Photographing Machine. P. V. W. Welsh, New York.
438,404—Photographic Camera. G. Shorkley, New York.

OCTOBER 21st.

- 438,601—Burnisher. W. H. Boles, Syracuse, N. Y.
438,834—Camera. G. Bausch, Syracuse, N. Y.
438,943—Photographic Apparatus Shutter. E. W. Perry, Jr., New York.

- 438,944—Photographic Camera. E. W. Perry, Jr., New York.
 439,012—Magazine Plate-holder for Photographic Apparatus. E. Kipper, Adams, Mass., and E. W. Perry, Jr., New York.
 439,013—Photographic Plate-holder. E. Kipper, Adams, Mass., and E. W. Perry, Jr., New York.
 439,021—Emulsion for Photographic Printing Paper. L. F. Marter, St. Charles, Mo.
 439,037—Photographic Camera Shutter. E. W. Perry, Jr., New York.
 439,044—Photograph Album. J. Sutter, Philadelphia, Pa.

OCTOBER 28th.

- 439,046—Adjustable Support for Photographic Cameras. C. S. Blake, Chicago, Ill.
 439,121—Photographic Camera. N. Crane, Newton, Mass.
 439,420—Stereopticon. L. D. McIntosh, Chicago, Ill.
 439,512—Background for Photographs. E. N. Howe, Forest, Ohio.
 439,533—Method of Printing Pictures on Celluloid. P. H. Mandel, Astoria, N. Y.
 439,536—Process of Transferring Prints or Designs. W. H. Maxwell, Chartiers, Pa.
 439,556—Focusing Attachment for Photographic Instruments. F. B. Quimby, Quincy, Mass.

NOVEMBER 4th.

- 439,660—Roll Holder for Photographic Cameras. W. H. Fuller, Passaic, N. J.
 439,651—Roll Holder. W. H. Fuller, Passaic, N. J.
 439,804—Photographic Camera. R. W. H. Lewis, Huntington, N. Y.
 439,808—Photographic Plate Holder. R. A. Anthony, New York, N. Y.
 439,999—Photographic Flash Light Diffuser. J. S. Bridges, Baltimore, Md.

NOVEMBER 11th.

- 440,137—Photographic Shutter. J. B. Church, Washington, D. C.
 440,228—Camera. G. H. Huribut, Belvidere, Ill.
 440,325—Flush Washer for Photographic Purposes. G. H. Richards, Philadelphia, Pa.
 440,399—Printing and Vignetting Frame. W. and W. Eason, Racine, Wis.
 440,427—Photographic Camera. H. J. Gray, London, England.
 440,462—Album and Support for the same. B. Branner, New York, N. Y.
 440,479—Album. T. Kelly, New York, N. Y.
 440,583—Photographic Shutter. E. B. Barker, Newark, N. J.

NOVEMBER 18th.

- 441,018—Camera. F. Nowlan, London, England.
 441,064—Pocket Photographic Apparatus. A. Goldschmid, Zurich, Switzerland.

NOVEMBER 25th.

- 441,153—Flash Light Photographic Apparatus. W. H. Harbeck, Toledo, Ohio.
 20,360—(Design Patent) Photographic Cardboard. E. Shepperd, San Francisco, Cal.

DECEMBER 2d.

- 441,704—Panoramic Camera. G. G. Rockwood, New York, and H. B. Shallenberger, Rochester, Pa.
 441,831—Photographic Film. G. Eastman, Rochester, N. Y.

DECEMBER 9th.

- 442,216—Photographic Camera. F. A. Brownell, Rochester, N. Y.
 442,224—Apparatus for producing Flash-Lights for Photographing and other purposes. A. Hemsley, Philadelphia, Pa.
 442,251—Photographic Objective. D. Gundlach, Rochester, N. Y.
 442,450—Making Iron Prints by Photography. C. R. McBlair, Washington, D. C.

DECEMBER 16th.

- 442,615—Camera. C. O. Ellison, Liverpool, England.
 442,741—Manufacturing Highly-Sensitive Isochromatic Gelatine Plates. H. W. Vogel, Berlin, Germany.

DECEMBER 23d.

- 443,359—Apparatus for facilitating the Microscopical Examination of Photographic Pictures. By Henry Duncan, London, England.
 443,386—Stop or Diaphragm for Photographic Cameras. L. G. Bigelow, Chattanooga, Tenn.

DECEMBER 30th.

- 443,555—Photographic Camera Attachment. A. Vignos, Canton, Ohio.
 443,610—Camera Apparatus, Slide, and Extension Bed. H. Bode, New York, N. Y.
 443,762—Photographer's Background. E. H. Hague, Jackson, Mich.

List of Dark-Rooms Open to the Use of Amateurs.

CALIFORNIA :

San Rafael—HOTEL RAFAEL.
East Pasadena—THE RAYMOND.
Monterey—THE DEL MONTE.
San Bernardino Co.—ARROWHEAD SPRINGS HOTEL.
San Diego—HOTEL CORONADO.
San Francisco, 226 Bush Street—SAM. C. PARTRIDGE.
Santa Barbara—SAN MARCO.
The Geysers, Sonoma Co.—THE GEYSERS HOTEL.

CANADA :

Lake Joseph, Muskoka, Ont.—THE STANLEY HOUSE.

ILLINOIS :

Chicago, 182 Wabash Avenue—THE CHICAGO CAMERA CLUB.
Chicago, 185 Wabash Avenue—GAYTON A. DOUGLASS & Co.
Chicago, 208 State Street—THE BLAIR CAMERA Co.
Chicago, 215 Wabash Avenue—SWEET, WALLACH & Co.

MAINE :

Southwest Harbor, Mt. Desert—THE CLERMONT HOUSE.

MARYLAND :

Baltimore, North Charles Street—W. C. RUSSELL.

MASSACHUSETTS :

Boston, 56 Bromfield Street—BARKER & STABIRD.

MICHIGAN :

Detroit, No. 14 East Larned Street—ALLEN BROS.

NEW HAMPSHIRE :

Littleton—THE CHISWICK INN.
White Mountains—PROFILE HOUSE.

NEW YORK :

Adirondacks—CASCADE LAKE HOUSE.
Blue Mountain Lake, Hamilton Co.—PROSPECT HOUSE.
Bolton, Lake George—LAKE VIEW HOUSE.
Brooklyn, 1197 Bedford Avenue—BROOKLYN CAMERA Co.
Brooklyn, 529 Fulton Street—C. E. HOPKINS.
Buffalo, 37 and 39 Court Street—TUCKER & BUTTS.
Cairo—JENNINGS'S NEW HOTEL.
Big Indian Catskill Mountains—SLIDE MOUNTAIN HOUSE.
Ellenville—MT. MEENAHGA, SUMMER HOME, V. E. Terwilliger. Running water.
Hunter—BREEZE LAWN.
Kidder's Ferry, Cayuga Lake—COLE'S HOTEL.
Lake George—FORT WILLIAM HENRY HOTEL.
New York City, 111 Nassau Street—LOEBER BROS.
New York City, 396 Broome Street—R. H. MORAN.
Niagara Falls—SPENCER HOUSE.
Westport—THE WESTPORT INN.

NORTH CAROLINA :

Hot Springs—MOUNTAIN PARK HOTEL.

OREGON :

Portland, 69 Morrison Street—E. J. PARTRIDGE.

OHIO :

Cincinnati, 148 West Fourth Street—L. M. PRINCE & BRO.

PENNSYLVANIA :

Dingman's Ferry—HIGH FALLS HOUSE.
Eagle's Mere, Sullivan County—EAGLE'S MERE HOTEL. Supplies, plates, and chemicals.
Philadelphia, 1022 Walnut Street—W. H. WALMSLEY, LTD.
Philadelphia, 1226 Arch Street—BUCHANAN, BROMLEY & Co. Open the year round.

VERMONT :

Underhill—DIXON HOUSE.

VIRGINIA :

Luray—LURAY INN.



Negative by Francis Blake.

BOSTON PHOTOGRAPHURE CO.

"PIGEONS."

Time of Exposure One-thousandth part of a second, Focal-plane Shutter.
3 B Dallmeyer lens full opening. Plate, Cramer No. 50.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III. BOSTON, MASS., FEBRUARY, 1892.

Our Illustration.

IN CONNECTION with Mr. Blake's valuable paper, entitled "Focal-plane Shutters," printed in this issue, we are pleased to be able to give our readers a practical proof of the results obtained with the focal-plane shutter in our frontispiece. The negative from which the gelatin-coated plate was made was an enlargement of two diameters from the original four by five negative. The original negative was made on a General N. Co. plate with a No. 3 B Dallmeyer Lens worked with full opening. We have never seen so good an example of shutter work, and the quality of the reproduction speaks volumes in favor of the focal-plane shutter advocated by Mr. Blake.

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Printing Surfaces and Their Preparation.

BY W. H. BURBANK.

PROBABLY few of our readers are aware of the very great power of altering the general appearance of a print by a wise choice and use of a quality of paper best adapted to produce the desired result. Most amateurs probably content themselves with the somewhat wide range of choice now easily possible in commercial printing papers, forgetting, or not knowing, that with certain minor differences the final results are very similar among different papers of the same class.

Any one who has done any experimenting in the way of sensitizing different sorts of papers for his own use, cannot fail, I think, to have been struck by the very wide differences of effect rendered by papers of various kinds, and if he be observant he will have noticed, especially in prints of moderate size, a greater breadth of effect and a more artistic massing when paper of a rough texture has been used. Indeed so true is this, that exceedingly impressionistic prints can be made from negatives of the utmost sharpness and richness of detail by printing on a rough surfaced paper,



No. 1. J. H. Blake

BOSTON PHOTOGRAPHIC CO.

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such as Whatman's. If any one doubts the truth of this statement, he has only to make a series of prints from a negative on papers ranging in fineness of surface texture from the gloss of double albumenized to the rugosities of the rougher grades of drawing paper, when, if he be not hopelessly wedded to gloss and detail, he will acknowledge the superior artistic quality of the rough paper print and its truer rendering of values.

All this is acknowledged by many even of those who never make use of the rough paper in their own practice, mainly because they have neither time nor inclination to prepare it. It is greatly to be desired that some enterprising dealer would place on the market a rough surface paper salted for sensitizing. In default of this, the amateur must perforce prepare his own paper, a task of no great difficulty, and one which opens up a wide and profitable field of experiment in the selection of methods. In order to awaken an interest in this now little worked process of silver printing, I have taken the trouble to repeat certain experiments made a few years ago, and to embody the results in the present series of brief, practical papers, which will not, I trust, be without value to some, at least, of my readers.

I have further availed myself of this opportunity to give some notes and hints on possible modifications in existing methods which seem to promise good results after further experimenting. So far as possible I shall point out the weakness as well as the excellences of the processes described, and indicate their fitness for special kinds of work.

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Animated Life in Landscapes.

By H. J. BUNTIN.

LONG ago, in the Age of Fable, there reigned over a certain country a mighty king whose name is now lost in the mist of years. This king possessed supernatural powers. At his bidding the elements grew obedient, and all the forces of nature joined hands to work out his every desire. He was very fond of odd experiments; and especially delighted in testing the sense of beauty and the dramatic instincts of those around him. One day he called to the foot of his throne several of his favorite courtiers and gave them this command: "Go ye forth throughout all the world, even from the blazing tropics to the regions of everlasting ice, and a priceless jewel will I give unto him who brings back that object which possesses the greatest interest to the human mind."

After due preparation the courtiers departed on their mission of search, clothed with full and ample powers to travel with the speed of lightning, and to overcome all obstacles that might arise to defeat the king's purpose.

Each of the courtiers was also filled with an enthusiastic ambition to win the priceless jewel which, he knew, would also carry with it the personal

favor and future good-will of the king. No two of them took the same direction, but each one followed his individual fancy. To describe their separate experiences as they sped from place to place on their strange quest is here unnecessary. But in the course of time they had all returned to their king's domains, bringing each an object of interest which was considered by its possessor as sure of winning the glorious prize.

The king then called them before him once more, and bade them produce the objects of interest brought, and state the reasons why they were considered worthy his choice in the contest for the priceless jewel. The first courtier bowed his head and thus began :

"Sire, during my wanderings in the region of the setting sun I came upon a strange expanse of beautiful land called A Prairie. The tall grasses undulating like the waves of the sea, teach us the lesson of perfect grace and poetic motion. In every direction the clear, pure atmosphere carries the eye so far away, that the level plains seem to be without beginning or end, while ever and anon the fleeting delusions of the mysterious mirage come and go like fanciful dreams. Surely, Sire, nothing can be more interesting than this Vast Prairie."

But the king shook his head and replied, "Well done, but there is something yet beyond."

The next courtier came forward and said : "Gracious Master, once when I was discouraged and weary of my search I came upon a Hidden Valley whose beauty so captivated my thoughts that I have brought it to your feet for your just consideration. See those lines of majestic trees along the shores of that silvery stream ; note the play of light and shade on the tinted foliage ; springs of sparkling water gush forth from the earth with melodious songs ; the vines, and fruits, and flowers, growing hither and thither, are fairer than tongue can name or imagination conceive. Can there be, oh king, aught of greater interest?"

The king smiled his approval, and said again, "Well done, but there is something yet beyond."

The third courtier, filled with confidence, then spake as follows :

"Mighty Sovereign, I, too, saw and admired the Vast Prairie and the Hidden Valley, but their interest was also lost when I ascended and explored this Chain of Mountains. Here are precipices whose great height fill the mind with awe ; here are rocks, voluminous and vast, whose age and whose history are reckoned by and extend through millions of years ; here are peaks lifting their snowy heads almost to the very door of Heaven ; here are prospects and scenes so wild, so wonderful, and so extensive that naught on earth can equal them. This Chain of Mountains must be the climax of interest, is it not so?"

Again the king said, "Well done, but there is something yet beyond."

As this dissatisfied courtier stepped aside, the fourth one advanced and offered his choice in these words :

"All-wise ruler, in my travels I left behind the Vast Prairie, the Hidden Valley, and the Chain of Mountains, offered by my brothers, and came to the shores of the Boundless Sea. I felt that I need go no further. The unending field of blue as it spreads away beyond where sight does not follow, carries with it a sublime inspiration ; the continuous roll of the waters ; the snowy crested waves chasing the winds from shore to shore ; the break and recoil of the restless surf on the sands of the beach,—all speak of an everlasting activity. While around them and over them hangs the ever present mystery, 'What is there below, and what beyond?' Oh, Sire, can the land furnish an object equal in interest to the Boundless Sea?"

Again spake the king, "Well done, but there is something yet beyond."

The fifth courtier presented himself in these words : "Illustrious king, over land and sea I wandered for many a weary day and was unable to find what you ask for until I turned my eyes heavenward and beheld the Clouds Above. From morning to night, and from night to morning they are continually changing in form, color, and beauty. As the human mind loves variety more than all else, here is its chiefest delight.

"See yon departing storm sinking slowly in the east. Note how those fleecy rolls above gradually deepen and darken into the blackness below ; read there on the words of fire written by the electric flash ; then turn to the west for a picture of Peace, and watch the evening sunbeams pencil their glories on the banners of the sky. At the earliest dawn of time this succession of beautiful pictures began to move across the face of created things, and will so continue, on and on 'Until our race has run its course, and the wide firmament is rolled up like a scroll.' Oh, king, when my eyes were opened to these wonderful visions, I hesitated no longer, but brought them here for the prize you have promised."

Once more the king repeated, "Well done, but there is something yet beyond."

Then came the last courtier, and as he began to speak with a modest and quiet air, the king was seen to regard him with unusual attention.

"O, righteous Sire," said he, "there is no spot on earth which I have not visited with your words of command always in my mind. The Vast Prairie first delighted me ; but upon close investigation I found it had been created for the abode of living creatures. In the scale of importance the Vast Prairie came secondary to these animate creatures whose home it was. I found also that this Animated Life possessed a most extraordinary power when compared with the Vast Prairie—the power of voluntary motion and independent action. It also had appetites that made it seek food and drink. It had instincts that warned it of danger and the changes of climate. Then seeking for the highest type of this Animated Life, I found it to be a

Human Being. In addition to appetites and instincts, this Human Being possessed the faculties of reason and imagination. These faculties would lead the Human Being from this world to the regions of infinite space in search of other worlds there. They would cause him to leap beyond the borders of Time and explore the mysteries of Eternity.

"From land to land I traced this Human Being and found that he changed his habits, his color, and his mental capacity with the differences of climate. I saw him set his plowshare in the fields of the Hidden Valley, and they blossomed into beauty and were laden with fruits. I saw him dig from the Chain of Mountains gold and precious stones. On their lofty summits he planted his telescopes and read the secrets of the stars. I saw him across the Boundless Sea in crafts of his own construction. He captured the monsters within its waters and converted them into purposes of food and utility. I saw him draw from the Clouds Above their dreaded lightning. I saw him bring it under control and train it to carry intelligence over all lands and under all seas. I found that all things were created for his pleasure, his support, and his comfort. Therefore have I brought you this Human Being, the highest type of Animated Life, as the greatest object of interest to the human mind in this world."

When this courtier had concluded, the king rose to his feet, stepped down from his throne, and thus gave his decision :

"Rightly and wisely hast thou chosen. To consider this material world, or any portion thereof, separate and apart from the Animate Life for which it was created, would render it purposeless and uninteresting. Together must they be joined, for thus was it intended from the beginning. This Animate Life, to the end of time, will command more of sorrow, more of delight, and more of sublimest thought, than all else that may exist or be dreamed of in the realms of Reality and Romance. From this day henceforth thou shalt have a seat at my right hand, and for the choice thou hast made I award unto thee this Priceless Jewel."

But what has all this story to do with the subject in hand? Let us see. What are we about to do? Make a photograph of a landscape that will be a picture. Rather a serious undertaking, my good friend, so consider all things thoroughly before you begin.

What is a picture? Well, for present purposes, we will say there are two classes of pictures: The first we may call the Practical Class, and it includes all copies of objects; the second we may call the Artistic Class, which includes those representations of objects made in a dramatic or beautiful manner, so as to convey to the understanding some idea or some story. Amateurs indulge somewhat in both classes of pictures; for instance, we take a copy of our friend's home, to please him we photograph his face looking square in the lens, to pay for a good dinner. This is eminently Practical Photography. But we also try, once in a while, to secure a landscape that will be worthy of being classed among the Artistic.

Anything acquires the dignity of an art when it is done in a beautiful or a dramatic manner; for instance, all language is used to express thought, but no language becomes eloquence or poetry until the expression is rendered dramatic or beautiful. The building of a house is not architecture unless the builder makes the structure beautiful. So the taking of a landscape becomes artistic photography when the result achieved is a beautiful or a dramatic expression of some idea or some story.

What objects, then, are best to introduce in order that an idea or a story may be told by your photograph? Naturally those that possess the most interest to the human mind, *i. e.*, some phase of Animated Life.

[To be continued.]

Land of the Sky.

BY MR. F. C. BEACH.

IT IS a photographers' paradise. Every artist with half an eye, who has visited the mountains of Western North Carolina round about Hot Springs, will admit the truth of what I say. The man who comes here without a camera soon begins to wish that he had one. Mountain scenes,



A GLIMPSE OF THE FRENCH BROAD.

valley scenes, river views, and brook glimpses, make the observer desirous of taking away a deeper impression than that retained by the mind's eye merely. The peculiarities of native life, in this out-of-the-way place, offer a field for camera work, and the pictures would surely interest friends at home. It is not uncommon to see a man going to church astride of an ox, without saddle or bridle. When the rider wishes to steer his horned steed he reaches for the right or left horn, gives it a twitch, and thereupon, the ox



ALONG THE POINT ROCK ROAD.

moves to the right or the left, as the signal indicates. "Spike-teams" are common. They consist of a mule and an ox hitched together, with a horse ahead of them. The vehicle is usually a prairie schooner.

The mountains to be photographed range in height from nearly 7,000 feet downward, here being the highest land east of the Rocky Mountains. At one point on the railroad coming over the Blue Ridge a photograph can be taken showing seventeen different sections of the track, so crooked is the ascent up the steepest railway grade in this country. If you are lucky enough to come across an illicit whiskey still where "Moonshiners" operate, the amateur finds a subject as yet but little pictured. The "Moonshiners" are suspicious, and have an unpleasant habit of setting down as a revenue spy

the daring but innocent photographers who may invade their haunts. If convinced that a photographer was really a spy, the deadly squirrel rifle is likely to put an end to the enthusiast's picture-taking. But prove to the "Moonshiners" that you are harmless, and he becomes a willing subject for



POINT ROCK.

a negative, together with his wife and family. People down this way are proud to have their pictures "took."

A guest at the Mountain Park Hotel was up on a neighboring mountain recently, with his Kodak under his arm. Hearing a rustling noise in the

bushes he turned, only to see a big black bear fleeing down the mountain. The photographer was disgusted because he was seized with "Buck Ague" at the moment and did not recover in time to get a snap-shot at bruin. The bears around here are modest. They frequently walk up to the very muzzles

A WAYSIDE CABIN.



of murderous rifles without flinching, but the detective camera is seemingly a new thing to the grizzly—a thing which he cannot face with equanimity.

It should be noted that the Mountain Park Hotel is fitted with excellent dark-rooms, and that visiting amateurs find every convenience at hand for practicing their art.

The accompanying illustrations give two views along the French Broad River; Point Rock, the boundary mark between North Carolina and Tennessee; a typical cabin and a cascade near the Mountain Park Hotel. The old mill wheel is a relic of the late unpleasantness.



THE CASCADES ON THE ROUND TOP ROAD.



ON THE OLD STAGE ROAD.

WOMAN'S WORK.

[In the December number we gave some extracts from Miss Barnes's paper; it now gives us pleasure to give the paper in full, as read by her, and as it appeared in the Amateur Photography department of *Frank Leslie's Illustrated Monthly*.]

The Real and the Ideal.

By Miss CATHERINE WEED BARNES.

I have selected for my subject to-night one which will, perhaps, lay my words open to the criticism passed by Henry Ward Beecher on sermon writing. "I have heard sermons preached," he said, "where, if the text had the small-pox, the sermon would never catch it." What is real to one is another's ideal and, besides, our mental focus is constantly changing, the real and the ideal are interchangeable and, as the latter constantly escapes us, so the former is never our own, for with every human being there is a new way of looking at a subject. In camera work the ideal of to-day becomes the real of to-morrow until it grows so old that it is young again and appears as a new discovery. How can we call photography a new thing, when in Assyrian ruins is found what might be called the germ of the modern photographic lens? But the world moves fast in this nineteenth century, and the last decade has witnessed progress in camera work alone which would not have been believed possible when Daguerre, Talbot, and other pioneers dug the furrows where modern photography germinated and is growing to perfection.

My ideal of the art-science is a high one, but, as soon as it seems likely to be realized, the scale rises and renewed effort proves necessary. Therein lies perhaps its greatest charm, and it appeals most strongly to all who, besides artistic taste, enjoy the study of optics, chemistry, mechanics, and that indefinable mental quality which can blend them all into a homogeneous whole. Study the literature of this subject and see how vast it is, here and abroad. Try to keep abreast of the publications constantly issued and you will find you will have difficulty in reading anything else. The time is fast going by when it was considered mild lunacy to really take up amateur photography as a serious thing, and those who play with it are being left behind in the race.

There will always be a class who dislike work, and they will never rise beyond the dead level of cheap snap cameras. They have no ideals, have never thought the work worth study and are perfectly satisfied with half a picture out of focus and the vertical lines resembling a toboggan slide. Admirers of a certain favorite style of camera talk glibly of a universal focus, which always seems, to me, unworthily even passing consideration. One button-presser in the Yosemite Valley showed me a view of the Vernal Falls, taken by him on donkey-back. Imagine the picture as seen between the donkey's ears, which framed it on either side, the magnificent cascade and the aforesaid ears about of a size. In a portrait it is called "soft" and "artistic" where the face is so carelessly focused and timed that the retoucher has to spend hours in trying, too often ineffectually, to atone for the inevitable flatness. "The pose is so good," is told you, "you must not expect microscopic definition, it is not art." I fail to see why laziness and carelessness should be so exalted. There are altogether too many painters who seek to cover glaring faults of drawing by brilliancy of coloring, and the daubers with the brush have their counterparts in photography.

A well-taken photograph reveals what the human eye does not see clearly enough to convey any impression of it to the brain, and many beautiful details would escape one's memory if not thus caught by an infallible recorder. How often, for instance, we see in a portrait resemblances which in the person's living features might entirely escape notice. Why does a person say "that isn't like me," when he should say "that is not my idea of myself!" The truth is there is an element of vanity, latent it may be, in the best of us, and if it ever becomes visible it is in a photographic studio. An operator, who is also a philosopher, might found countless theories on this peculiarity. One needs in a studio the best lenses procurable, two or three are enough if thoroughly studied through all their moods and tenses and, especially, one needs plenty of room for really satisfactory work.

After giving up side-light work I began with a studio 9 x 19 feet and now have one 17 x 31, the inclined sky-light being 8 x 11, and the vertical four feet 6 x 11. It is possible for a man or

woman, who might never make a painter, to become a tolerable photographer, but never a great one. There is no royal road to learning, is as true in this work as in any other, and the hardest workers will eventually succeed. By hard workers I do not mean those who, although using labor enough, yet "scatter their fire," as soldiers say, but those who consider first, just where to put their feet on the upward path, keeping steadily to it and yet are able to seize a moment's inspiration which may carry them far in advance of their plodding companions. To accumulate the requisite amount of reserve strength for such *tours de force* much systematic, thoughtful, and conscientious work must be done. The element of chance must never enter into the calculations. Napoleon once said when asked to what he attributed his success as a general, "To being ready to change my plan of battle at a moment's notice." Such readiness in emergencies is not given to the hit and miss workers, and yet they are those who are apt to believe in iron-clad formulas. I gave an eiko formula to one camerist, who, finding it discolored, threw the solution away and took me to task for incorrect information. My slides for weeks past had been developed by the same formula.

It is absolutely important nowadays to read not only one or more photographic journals, but notice the occasional articles in the daily press, to keep well posted. There is so much to be learned all the time, and such books as Mr. Burbank's on dry-plate development are of infinite value to one who knows how to profit by what he reads. His explanations are clear, concise, and, best of all, suggestive. It is difficult to particularize, but I specially wish to call attention to his remarks on light in the developing room and the comparisons between various developers. It often takes considerable nerve to let a plate stay long enough in the developing tray, as well as in the hypo, and I am glad to see that he approves of double fixing. I have adopted a rule to keep all newspaper articles of photographic interest in a scrap-book, which is assuming goodly proportions. But I wish decidedly and strongly to take ground against a tendency which is sometimes apparent in such articles to belittle and vulgarize camera work and workers. Humor is one thing, but broad, vulgar farce is, emphatically, another, and most of the so-called "funny" articles on camera work and workers can safely be classed under the latter head. One must believe in and respect one's work to put into it that indescribable touch which, in sculpture and painting, we call inspiration. Look on the camera not as a machine but as one more of the wonder-working discoveries of that greatest of earthly wonders, the mind of man. What can be more mysterious than the evolving of the latent image on a sensitive plate, and does it ever grow less wonderful, that irresistible power of chemic forces to bring the image forth and hold it forever? But, in the glorious name of Art, do not resign that sceptre into the control of what is called "Luck." Do not venture to lay irreverent hands on the inner secrets of nature. From the moment of placing the plate in the holder until the print is finished feel you have under control a power greater than the alchemists of the olden time and appreciate it. It is necessary to work hard for a result to adequately realize its importance, and this is why I do not as a general thing care for hand cameras. Set up a tripod, screw on the camera, focus, expose, and pack things up again. You are not likely to take all that time and trouble on any but a good picture. Hand cameras are useful for moving objects, and where a tripod cannot easily be used, but the want of a sliding-front, swing-back, exact focus, and other advantages make their use very trying at times. I have several, but my favorite one was made to order and is fitted with a Voigtländer Euryscope, wide-angle, but also with great depth of focus. It is well worth twice its cost.

There is great diversity of opinion among camerists as to working any given plate, and where one succeeds another makes an utter failure. One trouble is, I think, changing back and forth between slow and fast plates. The latter are needed for large groups and for children in the studio. For all other subjects I prefer slow plates, well-timed, and a normal developer. The ideal plate ought, of course, to be rich in silver, and some of the treasury surplus might thus be profitably utilized. Fast plates are apt to need special treatment, and I would rather do my work at the beginning, focus and time carefully, instead of chancing both and then laboring over the negative to get only a fair result, and not that without intensifying. With slides it is often well to over-expose the plate, put it in saturated solution of bromide of potassium a few seconds and then into undiluted eiko. If the hypo bath reduces too much I use "Silver Intensifier," clearing any over-density by acid-sulphite, or alum and sulphuric acid. It is easy to tell, after a certain amount of experience, what treatment

will suit different slides as well as negatives. Those who do not understand camera work have a very vague idea of its difficulties, and many consider that all the work lies in printing and mounting. Preparing the negative seems to them mere sleight of hand in comparison. That there should be any special trouble in mounting seems very amusing, and when I am asked, often, "Do you do all your own printing?" my answer is, "When I consider it worth while." It does not pay, ordinarily, for an amateur to print, tone, and mount a dozen cabinets, for instance, as the sitter does not realize the time needed and so does not value them any the more for all your extra trouble. As the amateur usually pays for the necessary retouching, it would be asking a great deal of him to also make what prints are desired. I let the sitter have the use of the negative, and he orders the prints from a professional. This is, of course, only for ordinary portraits. If one has household or other cares it is almost impossible, without great extra trouble, to do all one's own printing. For special occasions I prefer to do it, and derive keen enjoyment from the great variety of printing processes.

Then, there is the great question of naturalism vs. sharpness, which is being brought into the court of public opinion in season and out of season. Each side seems incapable of realizing that the two are not, necessarily, antagonistic, and that there is no need of firing hard names at each other. "Needle-sharp" and "fuzzy" are very wide apart, but the golden mean of true naturalness lies between them. It is pleasant in looking at a landscape to know if you are seeing a figure or a bush, a door or a window, but one does not need to count the leaves on the one, the details of dress in the other, or every crack in the house. Our English cousins are having a lively cannonade all along the line on this subject, but it seems in truth as if we are not using words in their proper meaning. Definition is a better word than sharpness, and a certain amount of this shows careful, judicious work, while a careless worker is, as has been said, apt to seek shelter behind carelessness by insisting it shall be considered the only true art. And yet, especially in landscapes, the view should, as in nature, gradually grow more indistinct towards the horizon. The focus should be taken about half-way between the foreground and distance. Interiors should be more sharply defined than landscapes or portraits, there should be no doubt as to the forms of objects, and yet nothing must appear in harsh contrast. Why are there so few good interiors? A beginner turns his lens on one as unhesitatingly as on a landscape, with full faith, that all will come right, that no special care is needed. Is there one in ten where the furniture is placed properly with reference to the position of the lens, and yet not interfere with the natural look of the room? Chairs, tables, etc., etc., are often left so near the lens that only parts of them can show, and so much furniture is left in the room that the eye wearies trying to disentangle the confused mass. Halation, common fault as it is, cannot be worse than an interior I saw recently taken facing a window, the view within being taken by flash-light and that without by daylight. There was no perspective, it was like a Japanese picture, with too much definition, and the result was very inartistic. With portraits it is hard to see why it should be called beautiful to have half the head or figure clearly defined and the rest almost indistinguishable. The eyes ought to be clearly shown, and the requisite softness may be obtained by proper development. Let it be apparent, too, that it is hair and not a powdered wig on the head, and that the face has a line or two in it, not a dead level of utter sameness. Show if the dress be satin, velvet, or muslin, and let the hands be rounded as those of a statue. Have the whole figure stand out from the background so as to suggest atmosphere about it. In posing sitters, I find it well *not* to pose them, if the expression be allowable, but let them sit as they please, without the head-rest, until the look of utter misery with which they first faced the lens, passes away, meanwhile explaining that I am only arranging the light. When they seem comfortable, I quickly decide as to position, slip a large stop in the lens, slide the plate-holder into place, take the bulb in my hand, and before they fully comprehend the situation, the work is done. Get and hold the sitter's attention, that is the point, but it is hard to do so when you have to do all the work yourself, as many a professional will testify. Then, I never let the head-rest clamp the head, but simply make a support for it, and the majority of my sitters, especially if they sit often, learn not to mind it, though it seems to be an object of universal dread. Wishing to test new plates occasionally, and not always having a sitter ready, I have put a long tubing on one of my shutters so that the bulb can be slipped under the floor covering

and pressed by my foot, thus being operator and model in one. Accidentally, I found this tubing useful with children, as it seems to have a strange attraction for them, and they will often keep still to watch me take a picture in such an unusual way, when I could not take them by any other means. Almost any child will make a reasonably good picture if left to the operator and not made miserable by a strange dress, repeated changes in its position, and constant cautions to sit still or something dreadful might happen. One mother told her child in my studio to keep still or the "big man" would get her, under the influence of which threat she entirely lost the sweet look which was her great beauty. I have a strong fellow-feeling now for professionals who have to take sitters as they come and have seen children, for instance, whom no lens, development, or retoucher could make presentable, brought into the studio of a friend of mine for a sitting, and the handsomest portrait in his collection selected as a guide for the operator. Then the contingent, more or less numerous, of admiring relatives and friends is enough to drive the operator frantic. Yet, like Malvolio, he is obliged to "smile and smile."

With older sitters, before you fairly get the cloth over your head, comes the question, "Which way shall I look?" followed by "What shall I do with my hands?" "Must I have that dreadful head-rest?" Then the friends say, "Don't look that way, put your hands clear out of sight," etc., etc., meanwhile walking all around the room, until I say, in despair, "I am taking this picture from this particular part of the room, and this is not a panoramic camera." Portraiture, notwithstanding its annoyances, is fascinating work, especially when it comes to fancy pictures, illustrations, and idealized heads. There is one thing about this kind of work which puzzles me. People will insist on making such a sharp line of demarcation between the painter and photographer in the matter of models. If a painter illustrates a poem, no one thinks of asking the names of his models, but if a photographer undertakes the work he is at once expected to give them or be considered very disobliging. Is there such a dearth of imagination in the world that the subject of a picture is not of vastly more importance than the model who sits for it? A fancy photograph is not a portrait any more than a fancy painting, and the photographer, in this work, is just as much at liberty as the painter to carry out his artistic tastes, but, while he cannot make such decided alterations in his model as the painter, I hold he is entitled to use any and every means in his power to make his picture a success. A painter often alters entire features in a face, or decidedly changes the figure, and that is considered perfectly allowable. In purely fancy work the photographer should be permitted the same privilege without question, but with portraits, pure and simple, the likeness should be thought of first, that is then the main thing. This is a matter which demands consideration now the camera is entering on the broad field of work once thought beyond its province,—book illustration. Do not, my fellow-workers, allow the camera to be undervalued any more than the palette and brush. In laying the latter aside, I did not consider that I was entering on a lower branch of work, that the one was any more art than the other.

Photography is like an enchanted garden where one is continually meeting the unexpected and wonderful. In all its manifold variety of work, there is not one which, to the earnest student, can fail to prove of interest. Those who take it up and follow it for any great length of time find it is not easily laid aside, and that it grows more and more exigent in its demands upon them. The increasing interest so generally felt in it is perhaps best shown by the organization recently in New York of a national association which will give amateurs a well-defined position and the substantial, practical benefits to be derived from the organization and banding together of the earnest, energetic workers of this country. It behooves every one who has the future of photography at heart to strengthen the hands of those called upon to initiate this new movement. Within it is the promise of a great future for the work which I believe is destined to prove of vital, positive benefit, as well as pleasure, to so many of our sisters and brothers all over the land. It demands and should receive the disinterested co-operation of each and every amateur for the general good. I have faith to believe we are starting a movement whose importance we hardly realize, but it is going to put great power in the amateurs' hands, whose use will call for wise judgment and consideration. Let us hope that these will not be wanting, and that the national league may be a potent factor in helping us to transform some at least, of our ideals into reality.

[Read before the Photographic Section of the Brooklyn Institute, December 9, 1890.]

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EDITORIAL COMMENT.

Mr. Blake's thoughtful article will be read with interest, as embodying the results of many careful experiments with shutters. The subject itself is an important one, and Mr. Blake has treated it in a thorough and painstaking manner. The capabilities of the focal plane shutter are well shown in frontispiece to this number.

In regard to our clubbing rate with the *Cosmopolitan*, we wish to state that it is open only to new subscribers to that magazine. Old subscribers to the *Cosmopolitan*, wishing to renew through us, must remit fifty cents extra.

A New Iron Printing Process.—Paper coated with the following, is said to give fine sepia-brown prints by simple fixation without toning:

Ferric oxalate,	7 parts.
Nitrate of silver,	7 parts.
Gelatine,	7 parts.
Tartaric acid,	3 parts.
Water,	128 parts.

Increasing the Sensitiveness of Dry Plates.—Mr. Petry claims that the

sensitiveness of a gelatino-bromide plate is appreciably increased by bathing it for one minute in the regular hydrochinon bath, and then washing and drying.

Electricity a Destroyer of the Latent Image.—According to Mr. Friese Greene, the latent image on a light-impressed plate may be destroyed by placing the plate in a tray containing slightly acidulated water, and passing through it an electric current. At the end of two minutes the image can no longer be developed, and the plate, washed and dried, can receive a new impression.

Women as Photographers.—Miss Catherine Weed Barnes's paper, with the above caption printed in the '91 *Mosaics*, contains much sound advice to amateurs of either sex. Of our art, she writes: "It appeals to the artistic sense, it embraces an endless variety of scientific interests, it cultivates the observing and reasoning powers, . . . it is elevating work when fully apprehended and respected." "The camera is not, and should not be considered, a toy." One good negative is worth a dozen poor ones, or those which need apology, and it is well to learn first what a good negative is, then carefully examine each one made. . . . Put your pictures side by side with those which have already won success, learn why they succeeded, and where your own failings are, if you expect to improve."

Photographic Specialists.—Dr. John H. Janeway, in an excellent article in the same annual, writes: "If we want our art-science to maintain its proud position, let earnest men and women select some special branch or subject, and with systematic efforts, bestow upon that all their time and vigor to conquer it, and thus benefit the whole."

Eikonogen and Hydrochinon Developers for Bromide Prints.—Gen. Joseph B. Brown, in *Mosaics*, recommends the following:

EIKONOGEN.

- | | |
|------------------------------------------------------------------|-------------|
| No. 1.—Sulphite of soda, | 120 grains. |
| Water, | 8 ounces. |
| Dissolve, and add eikonogen, | 60 grains. |
| No. 2.—Carbonate of potash, | 240 grains. |
| Water, | 5 ounces. |
| Three ounces of No. 1 to one ounce of No. 2 forms the developer. | |

HYDROCHINON.

- | | |
|--------------------------------------------------------------------------------|-------------|
| No. 1.—Sulphite of soda (pure crystals), | 240 grains. |
| Water, | 4 ounces. |
| Dissolve, and add hydrochinon, | 60 grains. |
| No. 2.—Saturated solution of carbonate of soda. | |
| Developer: No. 1, two drams; No. 2, one dram; water to make up to four ounces. | |

Phipson's Gallate of Iron Printing Process.—Well sized paper is floated for two minutes on a ten per cent. solution of ferric oxalate, dried in obscurity and exposed under a negative until a faint image is visible. The paper is then washed in several changes of water to remove all the soluble salt, and

the image is developed by floating the paper on a solution of gallic acid to which a few drops of nitric acid have been added. Strong negatives give the best results.

Borax in the Developer.—In the same publication, Col. J. Waterhouse recommends the use of borax in place of soda or potash with eikonogen and hydrochinon, claiming greater stability for developers prepared in this way. He gives the following formulas:

Eikonogen,	1 part.
Sodium sulphite,	2 parts.
Borax,	2 to 3 parts.
Water,	100 parts.
Hydrochinon,	1 part.
Sodium sulphite,	1 part.
Borax,	3 parts.
Water,	100 parts.

We propose to give these developers a thorough trial, and would be pleased to have some of our readers do the same, and report results to us for publication.

The Kodak as an Aid to Artistic Photography.—Mr. G. D. Milburn recently gave a successful demonstration of the capabilities of the Kodak before the members of the California Camera Club and a large number of invited guests. A negative of the audience was made with a No. 2 Kodak by flash-light, and within fifteen minutes a lantern slide from the negative was thrown on the screen. Following this a number of enlargements were made on bromide paper. This is all very interesting, but not so much so as Mr. Milburn's claim that, by reducing the mechanical operations of photography to a minimum, a great source of annoyance is removed and the operator given a better chance to display his artistic ability. This statement of Mr. Milburn gives what we may call the case of the Eastman Company in opposition to those who hold that there can be no art in this hand camera work, and that the growth of the hand camera has been against the development of the higher photography. The question is an interesting one and we would like to see it thoroughly ventilated on its merits and without fear or favor. We have seen many specimens of hand camera work which would seem to bear out Mr. Milburn's claim, and, *per contra*, we have seen more than sufficient to give the plaintiffs a good case.

New Camera Clubs.—Camera clubs have recently been organized at Toledo, Ohio, and Tarrytown, N. Y. The officers of the Toledo club are: President, F. S. Annable; Vice-President, E. L. Triffith; Secretary-Treasurer, H. E. Richards. The officers of the Tarrytown club are: President, Thomas H. Swift; Secretary-Treasurer, F. B. Morse. The amateurs of Hamilton, Ont., have also recently formed a club of which Mr. W. J. Grant is Secretary.

ENGLISH NOTES.

BY THOMAS BOLAS.

Dr. Emerson and His Teachings.—Dr. Emerson in his various writings, and notably in his "Naturalistic Photography," has emphasized the need of rather studying nature than the works and methods of other photographers, and to his teachings we have doubtless to attribute the almost entire disappearance of the worst form of old style landscape, in which trees and buildings stood boldly out against a white sky—and in the production of which two canons were so faithfully observed by the producer: 1st. Never to photograph unless on a day so clear and bright that the extreme distance is sharp. 2d. Always to so set the camera that the sun shines from behind it. One result of Emerson's work is a notable irruption of papers and discussions on impressionism and naturalism in photography—but many of those who are credited by the mass with being exponents of Emerson's impressionism, so far miss the mark as to put forth some incidents, appliances, specifics, or methods as being essentially concerned in the production of "naturalistic" photographs. This was very notably the case when Mr. Davison read a paper on "Impressionism in Photography" before the Society of Arts; neither reader nor discutants appearing to have any notion beyond the use of certain specifics for producing naturalistic results, such for example as working out of focus or the use of rough paper. This sort of thing in which the tool or method which may incidentally assist an intelligent worker in realizing nature, is exalted into an essential means, is calculated to lead to a convention more destructive to the production of desirable work than were the old conventions in photography. To expect to imitate nature by the mere use of certain manipulations is as reasonable as to expect to produce work like that of a distinguished painter by going into his studio and using his tools. The climax is reached now that "Naturalistic Paper" is advertised in the photographic publications! Dr. Emerson's latest illustrated work, "Wild Life on a Tidal Water," represents, in my opinion, a distinct advance on his previous efforts, both from the photographic and the photo-etching standpoint. The first plate, "Great Yarmouth Harbor," is, perhaps, the most striking as a picture, and will perhaps be regarded as the best thing Dr. Emerson has done; but if looked at by the light of those who, like Mr. Davison, seem to think that such artifices as rough paper and working out-of-focus are of the nature of essentials in realizing nature, this and the best of the plates are poor indeed. There are twenty-nine photo-etchings from Dr. Emerson's negatives and one from Mr. Goodall's painting, "The Last of the Ebb."

The Photographic Art Journal as a Weekly.—This paper comes as a penny weekly with the new year, and if kept up to the standard of the two numbers before me it will certainly deserve success. Mr. Andrew Pringle discourses of lantern-slide making, a subject on which he is well qualified to write. We also find a section for beginners, and illustrated chapters on "Photo-touring." Other good features are concise abstracts of the articles in contemporary photographic literature, and well written notes in short paragraphs. The *Photographic Art Journal* is published by Whittingham & Co., 44 Charterhouse Square, London.

Photography in Connection with a Public Library.—The management of the Bodleian Library at Oxford, in conjunction with the University Press, have made arrangements to supply photographs of such manuscripts and books as are in the library at prices which at first sight may appear unreasonably low, but which on second thought will be recognized as sufficient, provided that there is a steady run of work, and considering the extent to which system and routine may step into such operations. The prices are:

	Shillings.	Pence.
10x8 negative,	3	0
Silver print from same,	0	4
Platinotype or carbon print from same,	0	10
Twenty collotypes from same,	5	6

It is difficult to estimate the extent to which the usefulness of a library may be increased by such arrangements, and it is much to be hoped that librarians all over the world will find it possible to give similar facilities for obtaining copies of interesting matter.

Blisters on Albumen Prints.—Considering the fact that we have no very certain knowledge of the cause and conditions under which these afflictions appear, it is hardly to be wondered at that numerous views and many preventive remedies are current. Under these circumstances that which such an experienced silver printer as Mr. Ed. Dunmore has to say is of especial interest. In a communication to the Holborn Camera Club he pointed out that the immersion of the print in methylated spirit before toning and fixing operations will almost certainly prevent the formation of blisters, a fact indeed which was recorded some time previously by Mr. W. D. Richmond. This gentleman now points out that it is sufficient to lay the prints one at a time face downwards on a level and clean surface, such as a glass plate, and to sponge the backs with spirit, but they must be put into the first washing water while the paper is semi-transparent from the absorption of spirit. Mr. Richmond's view is that the alcohol immediately chases all the air out of the texture of the paper, and that although the spirit may become replaced by water during the first washing, yet the air remains excluded. Blisters come periodically and unexpectedly, and when they come those troubled would do well to try the simple expedient above referred to.

Lantern Slides from Book Illustrations.—When these have to be made a series is often required, and Mr. T. N. Armstrong, writing in the *British Journal of Photography*, points out how much labor may be saved by a little system in working, especially if artificial light is used so that a whole series may be taken without any variation of the exposure. When a book is worked from, a special printing frame is arranged with deep rebates and packing, so that the illustration can be brought into compression with a prearranged area of the front glass (which, by the way, in no sense mars the result), and the frame itself is set up against stops on a long copying board. The camera being now adjusted once for all, is clamped to the same horizontal board. For light Mr. Armstrong recommends two good argand gas burners, one each side of the copy, and naturally these lights should be shaded on the lens side. Good mineral oil lamps will answer just as well. After a few trial exposures the plates may be developed in batches. Lantern readings on illustrated book subjects are very popular and instructive, and if system be brought into the production of the slides the labor is comparatively trifling.

The Photographic Society of Great Britain.—This organization has just made a turn-over as a break in its normal condition of somnolence, and has gone so far in following younger and more active organizations as to open a dark-room for the use of its members, and there is indeed talk of a useful and central Photographic Institute, which is to provide tuition and laboratory practice in all the essential branches of photographic work. If this should be really done, as an outcome of any initiative taken by the Photographic Society of Great Britain, this society will doubtless once more become as influential as it was in the early days of photography. It was inaugurated in 1833 at a meeting where Sir Charles Eastlake took the chair, and its first executive council included many who were illustrious in art and science.

Yellow Light in the Dark-Room.—This subject is once more to the front, and the few who have up to the present retained the use of the red lamp are rapidly discarding it. The present widespread discussion of the subject appears to have arisen from the circumstance that the anonymous editor of the "Year Book of Photography" for 1891 claimed for Mr. M. W. H. Harrison the enunciation of a principle first set out by Mr. W. E. Debenham, that "ruby glass will certainly cut off more of the chemical action of light than yellow glass; but that it will cut off at the same time more of the luminosity to the eye"—and that in relation to its illuminating power, yellow light is less active on the film than red light. Mr. Debenham writes to the *Photographic News* claiming credit for the principle he laid down, and as a result the red lamp is being more and more discarded.

Photographic Shutters.

[Paper read before the Boston Camera Club April 14, 1890.]

BY FRANCIS BLAKE.

Mr. President and Gentlemen of the Club:—I purpose to call your attention this evening to some results obtained in an attempt to devise and make a perfect shutter for quick photographic exposures, to which attempt I have devoted much of my leisure during the last three or four years. The work has been most fascinating, and whatever success has attended it must be fully shared with my friend and kinsman, and our fellow-member, Mr. John G. Hubbard, who has been my almost constant companion and coadjutor.

At the outset I will say that the word "shutter" will be used throughout this paper, not because I deem it a correct name for the apparatus, but because more than thirty years of bad usage have so fixed it in the photographic vocabulary that it would be quixotic to try to displace it. Of course "opener" would be quite as appropriate, or rather inappropriate, a name as "shutter"; and of course "exposure" is the proper substitute for both, as its dictionary meaning defines precisely the function of the apparatus.

The earliest mention of shutters, with which I am familiar, is in a most excellent "Dictionary of Photography," edited by Thomas Sutton, and published at London in 1867. On page 156, under the heading "Instantaneous Shutters," he says: "There are many methods of instantaneously admitting and shutting off the light from the sensitive plate. Mr. Wilson, who has been most successful in getting good pictures with rapid exposures, adroitly uses his Highland bonnet placed in front of the lens. Some use flap-shutters in front of the lens, some a similar arrangement close behind the lens, and Mr. England and others use a guillotine sort of shutter, with a slot cut across it, which falls immediately in front of the sensitive plate. As the slot passes the plate, the parts thus exposed to light receive the full effect of the whole power of the lens. In some respects this is the best instantaneous shutter that has yet been devised, but it is apt to cause a vibration in the camera while in the act of falling."

I have quoted the above because I feel sure that later on you will share with me surprise that the principle of the focal-plane shutter, so clearly stated by Sutton, should have been entirely neglected by later workers in the photographic field.

Before beginning original work, it was thought best to test the speeds of the best market shutters. This was done by means of an apparatus which I devised and had the pleasure of exhibiting to the Boston Camera Club some years ago. The principle of the apparatus is simply photographing the image of the sun, as reflected by a freely falling silvered ball, and deducing the time of exposure by applying a law of gravitation to the linear value of the distorted image.

My apparatus consists of a vertical staff, about six feet in height, rigidly attached to an iron bed-plate. The staff is painted dead black and is graduated downward, on its front face, in white lines to feet and hundredths. At the top of staff is a movable piece readily adjusted to the height which brings the image of the sun, as seen upon the surface of the ball, exactly in line with the zero of the staff graduation. The silvered brass ball, 2½ inches in diameter and 2 lbs., 2 oz. in weight, is suspended by a short piece of silk trow-line, attached to a small vulcanite ring, which, in turn, is held by a spring-clip attached to the adjusting piece. On opening this spring-clip the ball is released, and falling parallel to the graduated staff is received into a padded box attached to the bed-plate.

It is perhaps needless to say that the exposure is made while the ball is falling, and that the length of the exposure is computed from the scale readings of the beginning and end of the black line, which marks on the negative the path of the reflected image of the sun.

To facilitate the computation of results, I have prepared the subjoined table, which gives the time of falling to the ten thousandth part of a second for each hundredth of a foot from 1.00 foot to 5.59 feet.

The formula used in computing this table is $t = \sqrt{\frac{d}{g}}$ when t = time; d = distance fallen; and g = 16.083 feet—the gravity constant at our latitude.

The manner of using the table will be made apparent by the following example:

An exposure having been made with a Prosch Duplex Shutter, the beginning of the black line marking the course of the sun's image on the negative was found to be opposite

the 4.02 ft. staff graduation, and its end opposite the 4.29 ft. graduation. Referring to the table it appears that

Feet. S.
Time of falling, . . . 4.02 = 0.5000
Time of falling, . . . 4.29 = 0.5165

Time of exposure, . . . = 0.0165

With a well-made shutter the accordance of the results obtained with this apparatus is remarkable. For example, three consecutive tests for fastest speed of a Prosch Duplex shutter gave the following values:

First test, 0.0164 S.
Second test, 0.0167
Third test, 0.0179

Mean, 0.0170

Each test brought into play a different part of the staff graduation.

Table giving the time in ten thousandths of a second for each hundredth of a foot, for a falling body at latitude $42^{\circ} 20'$:

	0	1	2	3	4	5	6	7	8	9
1.0	2494	2506	2518	2531	2543	2555	2567	2579	2592	2603
1.1	2615	2627	2639	2651	2663	2674	2686	2697	2709	2720
1.2	2732	2743	2754	2766	2777	2788	2799	2810	2821	2832
1.3	2843	2854	2865	2876	2887	2897	2908	2919	2929	2940
1.4	2951	2961	2972	2982	2992	3003	3013	3023	3034	3044
1.5	3054	3064	3074	3085	3095	3105	3115	3125	3135	3144
1.6	3154	3164	3174	3184	3193	3203	3213	3223	3232	3242
1.7	3251	3261	3270	3280	3289	3299	3308	3318	3327	3336
1.8	3346	3355	3364	3373	3383	3392	3401	3410	3419	3428
1.9	3437	3446	3455	3464	3473	3482	3491	3500	3509	3518
2.0	3527	3535	3544	3553	3562	3570	3579	3588	3596	3605
2.1	3614	3622	3631	3639	3648	3656	3665	3673	3682	3690
2.2	3699	3707	3716	3724	3732	3741	3749	3757	3765	3774
2.3	3782	3790	3798	3806	3815	3823	3831	3839	3847	3855
2.4	3863	3871	3879	3887	3895	3903	3911	3919	3927	3935
2.5	3943	3951	3959	3966	3974	3982	3990	3998	4005	4013
2.6	4021	4029	4036	4044	4052	4059	4067	4075	4082	4090
2.7	4098	4105	4113	4120	4128	4135	4143	4150	4158	4165
2.8	4173	4180	4188	4195	4202	4210	4217	4225	4232	4239
2.9	4247	4254	4261	4269	4276	4283	4290	4298	4305	4312
3.0	4319	4326	4334	4341	4348	4355	4362	4369	4376	4383
3.1	4391	4398	4405	4412	4419	4426	4433	4440	4447	4454
3.2	4461	4468	4475	4482	4489	4496	4502	4509	4516	4523
3.3	4530	4537	4544	4551	4557	4564	4571	4578	4585	4591
3.4	4598	4605	4612	4618	4625	4632	4639	4645	4652	4659
3.5	4665	4672	4679	4685	4692	4698	4705	4712	4718	4725
3.6	4731	4738	4745	4751	4758	4764	4771	4777	4784	4790
3.7	4797	4803	4810	4816	4823	4829	4835	4842	4848	4855
3.8	4861	4867	4874	4880	4887	4893	4899	4906	4912	4918
3.9	4925	4931	4937	4944	4950	4956	4962	4968	4975	4981
4.0	4987	4994	5000	5006	5012	5018	5025	5031	5037	5043
4.1	5049	5055	5062	5068	5074	5080	5086	5092	5098	5104
4.2	5111	5117	5123	5129	5135	5141	5147	5153	5159	5165
4.3	5171	5177	5183	5189	5195	5201	5207	5213	5219	5225
4.4	5231	5237	5243	5249	5255	5260	5266	5272	5278	5284
4.5	5290	5296	5302	5308	5313	5319	5325	5331	5337	5343
4.6	5348	5354	5360	5366	5372	5377	5383	5389	5395	5400
4.7	5406	5412	5418	5423	5429	5435	5441	5446	5452	5458
4.8	5463	5469	5475	5480	5486	5492	5497	5503	5509	5514
4.9	5520	5526	5531	5537	5542	5548	5554	5559	5565	5570
5.0	5576	5582	5587	5593	5598	5604	5609	5615	5620	5626
5.1	5632	5637	5643	5648	5654	5659	5665	5670	5676	5681
5.2	5686	5692	5697	5703	5708	5714	5719	5725	5730	5735
5.3	5741	5746	5752	5757	5763	5768	5773	5779	5784	5789
5.4	5795	5800	5806	5811	5816	5822	5827	5832	5838	5843
5.5	5848	5854	5859	5864	5869	5875	5880	5885	5891	5896

I shall now give the results obtained for speed of a number of well-known shutters tested with the apparatus just described.

1. Common wooden guillotine drop with four rubber bands. One and one-fourth inch slot passing $1\frac{1}{4}$ inch lens.

First test, 0.009 S.
Second test, 0.009

This shutter passes only 50 per cent. of the light which would fall on the lens if it were wholly uncovered during the action of the shutter. Moreover, it is highly objectionable on account of the violent jar it gives to lenses, often reducing the balsam with which they are sealed to a fine powder.

2. Gregg Shutter. In front of No. 3 Euryscope lens. Spring wound two turns.

First test, 0.034 S.
Second test, 0.035

3. Prosch Extra Rapid Shutter. Attached to 00 Euryscope lens. Fastest speed.

First test, 0.0028 S.
Second test, 0.0027
Third test, 0.0021

This is a special form of shutter in which a single narrow radical slot passes across the center of the lens tube. So little light is passed that I cannot regard this shutter as of any practical use.

4. Hoover Shutter. 3 D Dallmeyer lens. d/o is the full and $d/8$ the smallest opening.

	Quickest Speed.	Slowest Speed.
d/o	0.058 S.	0.195 S.
1	0.043	
2	0.036	0.130
3	0.031	
4	0.025	
5	0.022	
6	0.017	
7	0.013	
8	0.008	

For want of light anything less than $d/3$ would be of no practical use, so that the quickest effective speed of this shutter may be placed at 0.03 S., with a range up to 0.20.

5. Hoover Shutter. Large size made for Falk, the well-known professional photographer at New York.

Euryscope No. 6 Lens.

	Fastest.	Slowest.
$d/4$	0.055 S.	0.146 S.
4		0.096
5	0.036	
7	0.017	

6. Prosch Duplex Shutter. $3/d$ Dallmeyer lens. Full opening. About equal to $d/2$.

Fastest Speed.—Strong Spring. Slowest Speed.—Weak Spring.

First test, . . . 0.0164 S. 0.0302 S
Second test, . . 0.0167 0.0288

7. Prosch Duplex Shutter. Euryscope No. 2 lens.

Notch.	Strong Spring.	Weak Spring.
1	0.021 S.	0.032 S
2	0.016	0.028
3	0.013	0.027
4	0.012	0.026
5	0.010	0.025

8. Prosch Duplex Shutter. 00 A Euryscope lens. Strong spring. The tests with this shutter were very interesting, as they disclosed a second exposure due to the rebound of the shutter wings after closing. Mr. Ed. H. Lyon had been unable to obtain satisfactory pictures with this shutter and returned it to the makers immediately after the tests. The reputation of Messrs. Prosch & Co. for good mechanical work renders it almost unnecessary to remark that the subjoined results are unique.

Notch.	S.	Time from beginning of first to end of second exposure.
: First exposure, . . .	0.0122	: S.
1. : Closed for	0.0036	: 0.0262
: Second exposure, . .	0.0104	:
: First exposure, . . .	0.0100	: 0
2. : Closed for	0.0030	: 0.0219
: Second exposure, . .	0.0089	:
: First exposure, . . .	0.0084	:
3. : Closed for	0.0029	: 0.0190
: Second exposure, . .	0.0077	:
: First exposure, . . .	0.0077	:
4. : Closed for	0.0031	: 0.0169
: Second exposure, . .	0.0061	:

9. Newman Shutter. Attached to Beck lens. Property of Mr. W. G. Reed. Set at exposure marked $1/100$ second.

First test, 0.045 S.
Second test, 0.048

On February 3d of this year I tested a number of market shutters which were sent to me for the purpose by our President, Mr. Sweet. Of them all it seems to me that for all-around work, where the limit of speed is not desired, the Bausch & Lomb new style is the best adapted to an amateur's use. It is exceedingly well made and has a very large range of automatic exposures extending up to two or three seconds.

10. Bausch & Lomb (New Style). Full opening about 1 1-16 inches.

Graduated Time.	S.
1/100 : First test, . . .	0.016
: Second test, . . .	0.018
1/50 : First test, . . .	0.060
: Second test, . . .	0.043
1/10	0.047
1/100 ($\frac{1}{2}$ inch opening),	0.013

11. Hand Release, Brass Shutter. Full opening, 1 5-8 inches.

First test, 0.031 S.
Second test, 0.029

Shutter jars camera badly.

12. English Two-Winged Shutter. Two rubber bands. Full opening, 1 3-8 inches.

First test, 0.035 S.
Second test, 0.034

Shutter jars camera slightly.

13. French Flap Shutter. One rubber band. Full opening, 1 3-8 inches.

First test, 0.038 S.
Second test, 0.035

Shutter jars camera slightly.

14. Single Fan Shutter. Full opening, 1 1-2 inches.

First test, 0.029 S.

Second test, 0.030

Shutter jars camera slightly.

15. Long Single Slot Shutter. Full opening, 1 3-4 inches.

One test, 0.052 S.

16. Round Black Brass Shutter. Full opening, 1 1-2 inches. This shutter was so slow that the ball in both tests reached the box before exposure was finished. I estimate its speed at about one-quarter of a second.

17. Plunge "Patent" Shutter. Perken, Son & Rayment, London. Property of Dr. Tarbell.

Fastest speed, Notch 5, . . 0.054 S.

Slowest speed, Notch 1, . . 0.064

18. Haake & Albers. : Thury & Amey.

Frankfort a/m. : Geneve.

645.

Euryscope No. 3 Lens. Received from Messrs. Benjamin French & Co.

Fastest Speed.

Slowest Speed.

First test, . . . 0.009 S.

First test, . . . 0.103 S.

Second test, . . 0.009

Second test, . . 0.117

Third test, . . . 0.009

An exceedingly well-made shutter with a good range of automatic exposure.

19. Prosch (Special) Duplex. Made to order for Euryscope wide-angle lenses.

Time exposure, squeezing the bulb as quickly as possible, 0.211 S.

Instantaneous exposure, direct compression of bulb, . . 0.031

Instantaneous exposure, released compression of bulb:

First test, . . . 0.020 S.

Second test, . . 0.021

This is a most conveniently arranged shutter, as it is attached to the front-board of the camera, and carries on its front face a flange which receives any one of a set of wide-angle lenses.

Now the results which have just been given hurriedly have probably made but little impression on the minds of most of those who are present. A few of you may have had an intelligent interest in the statement of results obtained with some particular shutters with which you are familiar, but in general you probably have but an indistinct memory of a lot of unintelligible figures. Nevertheless, if you had had time to carefully digest the results obtained, I feel sure that you would have reached the conclusion that the average working speed of commercial shutters is about three-hundredths of a second, and that while a few of these shutters may be forced to come well within this average speed for test purposes, they are made to do so at the expense of so great a loss of light that they are of but little practical use when so forced.

Three-hundredths of a second is too slow a speed for photographing the quickest motions of animate or inanimate nature, and the successful pictures obtained with shutters of that speed are due to the fortunate coincidence between the moment of exposure and a slower phase of motion. Thus, with such a shutter, the most rapid phases of motion produce blurred plates which are thrown into the waste-box, and science receives but a few special—and therefore misleading—data in place of the many which the art of photography should be made to yield. This generalization forced itself upon Mr. Hubbard and myself after two years of patient experimentation with every conceivable form of shutter applied before, between, or immediately behind the lens; and, at his suggestion, we then abandoned all work in that direction and devoted ourselves to the perfection of the focal-plane shutter, as described in the quotation from Sutton at the beginning of this paper.

I know of no commercial shutter which passes more than 50 per cent. of the light which falls on the lens during its action; while the focal-plane shutter has been lying idle for

twenty-five years, in spite of its ability to pass close on to 100 per cent. What may be called the "light advantage" of the focal plane over an ordinary shutter is well indicated by the following considerations.

With any form of shutter in which a slot one inch in width passes at a uniform velocity behind a lens one inch in diameter, the sensitive plate will receive but 50 per cent. of the light which falls on the lens during the action of the shutter. Supposing the lens to be five inches in focal length, if the slot is merely moved backward to within one-quarter of an inch of the plate, 95 per cent. of the light falling on the lens during the action of the shutter will reach the plate.

Further consideration of the subject shows that in any single shutter placed immediately before, between, or behind a lens of one-inch opening, the percentage of light passed is equal to the number of inches of slot travels, less one, times the units of light per inch. Thus a one-inch slot travels two inches in uncovering and covering the lens. Calling the total light falling on the lens during the action of the shutter equal to 100 units, we have 50 units to each inch of slot travel. Slot travel two inches minus one = 1 inch \times 50 = 50, which is the percentage of light passed.

A two-inch slot would travel three inches and there would be $33\frac{1}{3}$ units of light to each inch: $3 - 1 = 2 \times 33\frac{1}{3} = 66\frac{2}{3}$ the percentage of light passed. Continuing the computation it will be seen that a three-inch slot would pass 75 per cent., a four-inch slot 80 per cent., and so on, until in order to pass 90 per cent. of the light it would be necessary to have a slot, nineteen inches long, pass by the lens in the same time that the focal-plane slot passes over five-hundredths of an inch, which is the diameter of the cone of rays from a one-inch lens of five inches focus at a point one-quarter of an inch in front of the sensitive plate. Opposed to this tremendous advantage, there is only one theoretical objection to the principal of the focal-plane shutter, and that is that all parts of the sensitive plate are not exposed at the same time. But practically this objection does not hold good, since the velocity of slot motion may be made so great that there is no sensible distention of the phase of motion of the moving object. Moreover, the possibility of any distention may be eliminated by setting up the camera at such a distance from the moving object that the angular value of its image on the sensitive plate shall be equal to or slightly less than the width of the shutter slot.

The focal-plane shutter, which I now show you, is the outcome of the experimental work carried on by Mr. Hubbard and myself during the last four years. It consists of a mahogany case attached to the backboard of a $6\frac{1}{2} \times 8\frac{1}{2}$ camera. The case is $18\frac{1}{2}$ inches long, $9\frac{1}{2}$ inches high, and $\frac{1}{2}$ inch thick outside measurements. At its center is an opening in which may be placed a focusing screen or a 4×5 plate holder.

Within the case are two screens, $5\frac{1}{2} \times 5\frac{1}{2}$, and $4\frac{1}{2} \times 5\frac{1}{2}$ inches in size. They are made of a very light frame-work of bamboo covered with thin tissue paper rendered thoroughly light proof by the application of a mixture of lamp-black and shellac. These screens run freely on two brass wires strained lengthwise across the wooden case above and below the plate-holder opening.

Attached to the base of the larger screen is a piece of thin sheet steel pivoted to the corner of the base at one end and divided on its lower edge into ten notches one-tenth of an inch apart. Attached to the opposite corner of the base of the smaller screen is a screw stud over which the notched piece may be slipped. By this simple bit of mechanism the two screens may be at will attached to each other, with a slot between them varying from one-tenth of an inch to one inch in width by tenths. The exposure is made while this slot is passing over the sensitive plate, motion being imparted to the screens by means of a steel pin connecting them with a wooden piston which in turn is driven through a brass tube by compressed air.

With a 1-10-inch slot in connection with a 2 B Dallmeyer Lens, three tests for speed of this shutter have given the following results:

First test,	0.0006 S.
Second test,	0.0006
Third test,	0.0005
Mean,	0.0006

This speed, which we may call half a thousandth of a second, is a severe tax upon the ability of the most rapid lenses and plates to produce pictures. It is obvious that the speed of the shutter may be increased to any desired extent by simply narrowing the width of the slot, but until the market affords us quicker lenses or plates there will be no practical advantage in making exposures of less than half a thousandth of a second.

The lantern slides of pigeons in flight, which will now be thrown upon the screen, were made from negatives taken with this shutter, using a slot two-tenths of an inch wide. The length of the exposure was, therefore, one-thousandth of a second, but you will note that the eyes and feathers of the birds are as sharp as if they had been standing still.*

*Our frontispiece is a reproduction made from an enlarged negative of the pigeons.—ED.

CORRESPONDENCE.

To the Editors of the American Amateur Photographer:

Gentlemen,—In your December issue Mr. Julius Wilcox makes the statement, "Hydrochinon has not favorably impressed me, etc." This seems to be the prevailing opinion at this time, and as it is a great favorite of mine I should like to give my experience with it. When hydrochinon first attracted attention as a developer, I procured some and used it according to various formulas published, which were rather concentrated, both in hydrochinon and alkali. The results were not particularly pleasing, until one day after commencing to develop a plate I was compelled to leave and attend to other work. The high lights were just beginning to make their appearance, the developer was thrown off, the plate covered with water, and tray covered. More than an hour elapsed before I could re-visit my dark-room to finish the development, when, upon examining the plate, I was surprised to find it perfectly developed ready for fixing. After coming out of the hypo, it proved to be the best I had yet developed with hydrochinon, in fact I had a negative in every way excellent. The subject was a country group, in which was a lady dressed in black holding a child dressed in white. The detail in both the black and white dresses was all that could be desired, while the white dress of the child was not too opaque to print nicely. This convinced me that the poor success I had had with hydrochinon was not the fault of the developer, but in the method of using. Since then I experimented with various proportions of hydrochinon and alkali, and now use as my usual developer on time exposures the following:

- No. 1.—Saturated solution of sulphite soda, 4 ounces.
 Hydrochinon (H. & F.), 100 grains.
 Pure water, 4 ounces.
 Mix and shake until thoroughly dissolved.

No. 2.—Saturated solution of washing soda.

To develop, take 3 or 4 drams No. 1; 2 drams, No. 2; water sufficient to make 4 ounces. Allow developer to act until shadows are veiled. Wash and fix. This gives with proper exposure (rather liberal than otherwise) a negative with beautiful gradations, no clear glass but detail in shadows, high lights sufficiently dense, but not opaque. This developer will keep, in separate solutions, for months with activity unimpaired. No danger of fog or of staining fingers or plate, or of injuring the film, is easily controlled by simply adding water, or if plate is much over-exposed some old developer. After an extensive trial of all of the various reducing agents in general use, I am convinced that this is the best for the amateur for time exposures. The only drawback is that it is somewhat slow in action, and in this strength cannot be used to develop more than two or three plates without the addition of fresh developer, which, after all, in my opinion, is not a disadvantage when excellent results are sought.

EDGAR B. BRITTON, M.D.

COLUMBIA, Mo., January 15, 1891.

Rev. W. H. Burbank, Brunswick, Me.:

Dear Sir,—The AMERICAN AMATEUR PHOTOGRAPHER having called for suggestions relative to a National Association of Amateur Photographers, now happily formed, I venture the following:

The Association will need an organ—an official bulletin. I think that it would be well to copy from the League of American Wheelmen in this regard. Let the Board of Directors make a contract with some periodical—the AMATEUR PHOTOGRAPHER itself is the only suitable one that I know of—similar to the contract made by the L. A. W. officers with the *Bicycling World*, the publishers of the PHOTOGRAPHER to furnish a stated amount of space monthly for the use of the Association, to be known as the Official Department, and also to send the magazine free to members of the Association. In this way the Association will be saved the expense of publishing a separate periodical.

The members will receive the worth of the annual dues in the magazine alone, and that will be an inducement to join, while every recruit will add strength and effectiveness and dignity to the Association. Numbers will count for much. The magazine itself will enjoy the extended patronage and firm support of a large body of organized workers in the art-science that it upholds, and those members will be the *readers* and the *workers*—the best audience for a magazine. With this added support and extended circulation, the publishers of the magazine may find their advertising more profitable and more extended.

All parties—Association, members, publishers—would profit by such an arrangement. The advantage to the publishers arising from the added importance of representing a great body of amateurs, and from the added strength of having a large number of readers deeply interested in the contents and the success of the magazine, would enable them to make such terms with the officers of the Association as would render it possible for the cost of magazine and dues together to be no more than the advertised price of the magazine alone. That is the case with the Wheelmen.

Members should, of course be allowed to join through their local clubs, or individually, as with the Wheelmen.

Very Truly Yours,

H. C. PENN.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Syracuse Camera Club.—At the annual meeting of the club on January 2d the following new officers were elected: President, John D. Pennock; Vice-President, J. R. Clancy; Secretary, R. W. Bellhouse; Treasurer, Samuel W. Rose.

The Society of Amateur Photographers of New York.—*Special Exhibition of Lantern Slides, Friday Evening, January 9th.*—The pictures selected were seventy-two Vienna slides, and about sixty by twenty-two different members of the society. Mr. William M. Murray acted as lecturer, and acquitted himself very creditably. Messrs. Beach and Vilmar operated the lantern. The meeting room was completely filled with an appreciative audience, among which were many ladies. Fault was found with the fact that the pictures were too large to be readily seen by those seated in the back part of the hall. As the room is very long and the ceiling not high it becomes quite a serious problem as to how a screen can be arranged to answer all the requirements of the showing of a good-sized picture to be seen by all. The lantern-slide committee had carefully looked over the set of one hundred slides contributed by the Vienna Camera Club to the Lantern Slide Interchange, and was compelled to throw out nearly thirty as being defective, the balance only being passable. The work represented

was that, mostly, of Mr. A. V. Loeber, of the Vienna Club, and cannot be judged as a fair example of what the club would send at another time. It is instructive as giving an idea of how the members of the Vienna Club regard lantern slides and lantern slide making. It required four separate grooved boxes, the grooves placed an inch apart and roughly cut out with a chisel across the grain of the wood at that, to hold the hundred slides, each box holding twenty-five. The views embraced such subjects as "St. Stephens' Cathedral in Vienna"; glimpses of the City Park in winter and summer; a few old houses; the city markets; a very good portrait of the sculptor, Mr. Hedley, at work in the club's rooms, modeling the bust of Archduchess Maria Theresa; Slavonian pedlars; groups of Hungarians; pottery market in Cattaro; Withowitz iron works, the largest in Austria; views in Jenbach, in Tyrol; pictures in Dalmatia; the old Roman ruins at Hainburg; Strassbourg, the new palace of the Emperor; glimpses of Beichtesgarden, Uken, and Reichenhall; ruins at Eger, and of the banquet hall where the mutinous officers of Wallenstein assembled; views about Lake Traun, Eben, and Langbat; a church interior at Traunkirchen, having a chancel carved to represent a fish net with water falling therefrom; views at Schafberg; and an interesting group of shoemakers' children. Some of the slides were from negatives by Herr Moeller. They are three and one-fourth inches square and are of unusually thick glass.

The pictures by members of the society were varied and interesting, and were arranged to represent New York scenes and miscellaneous views. There was a good view of Castle Garden from the battery, by F. C. Elgar; "Dredger at Work at a Pier on the East River," "Leaning Trees in Bronx Park," by C. C. Roumage; the "Coney Island Elephant," by G. Wundrum; "Swans in Central Park," by A. L. Simpson; "Central Park Goat Carriage," and an excellent view of "Beethoven's Statue" in the Park, by H. H. Sidman; interior "Western Gallery Metropolitan Museum of Art," by Charles Ballard; "Boat House in Central Park," showing beautiful water reflection, "Study of a Cow," "Log Cabin in West Virginia," and the "Memorial Bridge" at Milford, Ct., by W. B. Post; an interesting instantaneous picture of the "Launching of the New Crusier Maine," and the "Polar Bears in Central Park," by C. C. Hibbard; "King's Bridge," views in the Keene Valley, N. H., Boonton, N. J., and Lake Hopatcong, by William M. Murray; views of the "Mardi Gras" in New Orleans, by Dr. John T. Nagle; others at Glen Cove, L. I., by Ferdinand Ruppert; views in Asheville and Waynesville, N. C., and in the Adirondacks, by D. C. Young; similar views and pictures of New England scenery, by John S. Bussing; "Genesee Falls, Rochester, N. Y.," by C. S. McKune; "Stormy Water at Portland Light, Maine," by Rev. E. C. Bolles; "Effects of a Tornado at Wilkesbarre, Pa., by F. Vilmar; "Exterior and Interior of Miss Barnes's Garden Studio," at Albany, New York, by Miss C. W. Barnes; "Street Scene in Paris," by J. Wells Champney; "Cuban Volanta," by T. M. Yznaga; and a general view of "Lake Hopatcong," by R. A. B. Dayton. The general quality of the slides was so much better than the Vienna Club's, that they formed an agreeable contrast and a pleasant ending to a lengthy and interesting exhibition. Between the two series of slides there was an intermission of five minutes.

Tuesday, January 13th, occurred the regular monthly meeting of the society, called to order at 8.30 p.m., President James H. Stebbins, Jr., in the chair. The minutes of the previous meeting were read and approved. Papers promised by Mr. Fred. E. Ives of Philadelphia, and Mr. Alfred Steiglitz, on "Orthochromatic Photography," did not materialize, owing, in Mr. Steiglitz's case, to illness; but Mr. A. Peebles Smith explained his improved method of taking one or more pictures on different portions of the same plate, making three flash-light exposures, with President Stebbins as the subject, before the audience. A square wood hood is attached to the lens in which slides horizontally two rows of non-actinic colored glasses. After the subject is located to appear on one end of the ground glass, the colored glasses are slid sidewise to shut off all the light except that which comes from the subject. Then auriania (yellow) tinted collodion strips are introduced into the diaphragm aperture of the lens until one of the proper width is found to just overlap the edge or joining place of the two pictures. This retards the light at the point of juncture sufficiently to hold back the exposure, and prevent the otherwise distinct line of division, from showing. Several different collodion strips are required to match the different pictures. It was in the

introduction of these strips that Mr. Smith laid his chief claim of novelty. It is somewhat singular to note that Charles Wager Hull, Superintendent of the American Institute, a few nights afterwards displayed, at a test night meeting, slides from similar double negatives made by the wet process in 1860, which were very nearly as good as Mr. Smith's. Mr. Smith advised that the first exposure should be shorter than the second. His device was inspected with much interest by those present.

"Positive Prints on Paper" was the subject of an interesting paper read by President James H. Stebbins, Jr., in which the chemical character and the reactions of different processes was exhaustively treated. He accompanied the paper with several chemical experiments. Owing to cloudy weather he was unable to present as satisfactory prints as he had desired. He explained the reactions in the blue process, the advantage of combining iron salts with nitrate of uranium, which only becomes sensitive when in the presence of some organic matter. Nitrate of uranium is soluble in alcohol and ether, and is sensitive to light and heat. He made some experiments with citrate of iron and platinum salts. If the platinum salts be substituted for the ferric cyanide, in the usual blue print process, black pictures are the result. The iron salt is reduced from the ferric to the ferrous state in the presence of platinic chloride. Specimen prints of paper sensitized with nitrate of uranium and developed after printing on a bath of nitrate of silver, were exhibited. A brown-black print was thus obtained which Mr. Stebbins rather admired. He had succeeded in toning a bromide print before fixing with a solution of nitrate of uranium. The uranium salt is one that he had been experimenting with for some time, and he was disposed to think pictures of a warmer tone could be made with it than with any other salt. He described how a blue print could be turned into a black print by first dipping it in a solution of caustic soda which would apparently bleach out the picture, then wash it well and dip in a solution of tannic acid.

Mr. F. C. Beach exhibited a new and simple rocking device for rocking 5x8 and other trays, invented and sent to him by Mr. F. H. Brinkman of Baltimore, Md. It consisted of a box inclosing powerful clock-work and main driving spring, from the shaft of which was secured a link, which connected the shaft with a rectangular oscillating wire frame, resting on top of the box. The tray is set on the wire and as the clock-work is started the frame oscillates with great regularity. A simple adjusting screw on the outside enables the speed to be regulated fast or slow at will. Mr. Beach also showed two colored photographs loaned to him by Mr. E. Timme, a former member of the society, which were said to be the first ever sent to this country; they were made by Prof. Veresetz, of Austria, and had been given by him direct to Dr. Eder. Blue and red show very well, and it is thought the colors will not fade. The whites were decidedly degraded. It was, however, interesting to see specimens of this much-talked-of process; photographs in colors being the popular hope to be realized in future generations. Mr. Beach also exhibited the new eikonogen cartridge recently put on the market by Dr. Andressen, which contained the sulphite, potash all mixed in a dry state. To make six and one-half or ten ounces of developer the cartridge is broken in two and the contents simply dumped into six and one-half or ten ounces of water. It dissolves very readily. During the executive session following the scientific business a discussion arose as to the probable improvement of the lantern screen, complaint being made that the pictures at one end of the long meeting room of the society could not be easily seen. The lantern slide committee was requested to make some improvement. The Secretary stated that between six or eight new members had been elected since the last meeting. F. C. Beach was elected to represent the society in the American Lantern Slide Interchange for another year.

Friday, January 30th.—Exhibition of Lantern Slides.—For once since it has been in its new quarters the society was favored with a pleasant evening for its regular monthly exhibition of lantern slides, and a large audience was present to enjoy the excellent pictures that were thrown on the screen. The Lantern Slide Committee had provided a new sort of screen consisting of tracing paper attached to a wood frame six feet wide by eight long, hung from the ceiling fifteen feet distant from the rear wall of the room. This gave a greater seating space in front of the screen. The lantern was placed on a platform behind, thus throwing the picture through the screen. The fine texture of the paper and the effect

of the light passing through it, caused the image to appear much more brilliant and stereoscopic than by the usual reflecting screen. The audience thus had the benefit of all the light from the lantern. The pictures were smaller but more elevated and could be plainly observed from all parts of the hall. Mr. William M. Murray acted very acceptably as lecturer. The lantern was operated by Mr. F. C. Beach and Mr. A. L. Simpson. Slides of the Pacific Coast Amateur Photographic Association and the Buffalo Camera Club formed the collection which was exhibited, and of the two the Buffalo was rather superior in clearness and brilliancy. In the San Francisco set there were several excellent marine studies, those of special note were: "Waiting for the Tide," by Mr. Tasheira; collision of a small boat with a yacht racer, by Mr. Lowden; "The Yacht Ripple," by Mr. Carlton; "The Mollie Woggin and Seven Bells, Racing," by Mr. Ziel; the latter had also a good view of Mount Shasta. Mr. Lowden's "Snaking Logs to the Mill" in the Mendocino Redwoods, was a beautiful picture, full of life, and artistically arranged. "Confidence," a figure study by Mr. Treat, slide by Mr. Woods, and likewise "In the Harvest Field," by the same man, were very good representations of difficult subjects. Prof. S. W. Burnham's views of "The Lick Observatory in Winter," "Sunset from Mount Hamilton," portion of the moon's surface, as seen through the Lick telescope, were very clear and interesting. "A California Stage Coach," by Mr. Carlton, was a reminder of the old days, and exceedingly well done. Mr. Dornin had four capital figure compositions, called "Blue Munday," representing a little girl in front of a hut-like house, "Washing," "Wringing," "Hanging Out the Clothes," and having "A Neighborly Call."

A lady member, Miss LeCount, contributed some artistically arranged and lighted figure studies, entitled "On the Bridge," "Kathleen Mavourene," and "Evangeline." A natural study of "California Ferns," by her, was full of beautiful detail and a very clear slide. Originality displayed in the figure compositions by members of this association is one of the chief features of the collection. "Chapel Radley, near Oxford," by Mr. E. L. Woods, was a remarkably good interior, and his picture of a fog bank was very peculiar.

In the Buffalo set were many excellent marine pictures by Dr. G. Hunter Bartlett, and pretty views of English scenery also by him. There were several very fine slides of dogs in odd positions. Mr. C. E. Hayes's "Grandpa's Hat" (a dog with a high hat on his head) was very novel; another was "So Near and Yet So Far," a cat perched on a clothes-line pole with a black dog at the bottom looking up at her; a group by him showing two or three men at work on fishing nets, called "First Signs of Spring," was very clear; "Meet of the League of American Wheelmen at Buffalo, N. Y.," and a very good group of four pretty children, by E. F. Hall, one slide being made by Mr. Hayes, were surprisingly good. Dr. Bartlett had a striking picture of surf at Asbury Park, and an excellent instantaneous view of a train in motion on the Brooklyn Bridge. "The Rapids Above Niagara Falls," by Dr. B. Barton, was a characteristic slide of that interesting subject. A picturesque view in Buffalo Harbor, by O. H. Hauenstein, gave an excellent idea of the mammoth grain elevators that line the shore of the city.

"Interior of Buffalo, St. Paul's Cathedral," by G. Hunter Bartlett, and "Interior of a Chinese Opium Den," by G. J. Bailey, were unusually good, and at the same time strange contrasts. "Why are the Wild Waves Sad?" Lake Erie, by H. H. Boyce, was a charming study of lake surf. "Attention" and "Good friends," by Charles E. Hayes, were two fine dog studies. "Drift-Wood at Portage" was a soft and delightful landscape view, by George B. Hayes. Some of Mr. G. Hunter Bartlett's English views were particularly good. One was called "Yard of Old Falcon Inn, Cambridge," where some of Shakespeare's plays were acted. It is said the arrangement of the modern theatre comes from these old yards. A very good cloud effect picture on Lake Erie concluded the set.

The exhibition met with the approval of all who were present and was one of the most successful ever given by the society. On February 23d, a smoking concert is to be given and another exhibition on February 27th. Early in March an exhibition of "Views in Spain and Moroco," by Mr. Richard H. Lawrence, to be explained by Rev. E. C. Bolles, is to be given at Chickering Hall, Fifth Avenue and Eighteenth Street.

Hoboken Camera Club.—At the recent competitive exhibition prizes were awarded to William Allen, F. A. Muench, Alexander Beckers, and George H. Steljes.

The American Lantern Slide Interchange.—The reports that Mr. F. C. Beach has received from the two sets of American slides sent to England and Vienna is very flattering to the wisdom of the executive committee in carefully selecting representative views and ones that are of interest to our foreign friends, also to the excellence of the new safe system of packing slides, consisting of cast grooved rubber strips eleven and one-half inches long attached to the sides of the slide boxes, and having thick strips of felting on the bottom and top, thus inclosing the slides on all sides in a cushion. Both sets of slides were received in perfect order, not a single one being broken. The Australian Society at East Melbourne, Victoria, is preparing a set of views to be sent to New York. The Worcester Lantern Slide Club has made application to enter the Interchange, and under the able leadership of Dr. George Francis, will doubtless contribute an interesting set next season.

Correspondence with Lient. Charles Gladstone of the Lantern Society of London elicits a willingness on their part to entertain an annual exchange of lantern slides with the New York Society. The Vienna Camera Club intends to imitate the method of packing slides adopted by the Interchange. Their slides have been exhibited before the New York Society, the Newark Camera Club, and the Pittsburgh Society. The English "Photography" slides have been shown before "Photographic Society of Philadelphia," "Cincinnati Camera Club," "Newark Camera Club," "Baltimore Society of Amateur Photographers," "Syracuse Camera Club," "Buffalo Camera Club," "Detroit Lantern Club," "Chicago Lantern Slide Club," "Pacific Coast Amateur Photographic Association," and "Louisville Camera Club."

The Detroit Camera Club.—This club has lately been re-organized under the name of "The Detroit Lantern Club." Mr. Charles C. Hinchman is the active leader.

Exhibition of the Boston Camera Club.—The recent spring exhibition of the club brought a fair number of prints of average merit, of which Mr. Preston's "At the Setting of the Sun" was easily first in artistic feeling. The first prize was awarded to a transparency of a snow scene by D. W. Lewis. Honorable mention was accorded to Mr. H. C. Dunham, landscape; Mr. G. M. Morgan, portrait; Mr. G. H. Eaton, portrait; M. W. G. Preston, sunset scene at Marion, Mass.; and Mr. C. H. Currier, bromide enlargement. We hope to review the exhibition at length in our March number.

The Paris Photographic Society.—Of the society a correspondent writes that it has fairly good quarters to which is attached a well-lighted *atelier*. The society numbers ninety-five members; the annual dues are 100 francs, and the annual rental paid is 500 francs. An exhibition of their work has been recently held. The weather in Paris has been unusually severe during the winter, the freezing of the water on the fountains causing them to assume very grotesque and novel shapes.

The American Photographic Conference.—The council of the conference has sent out a circular letter under date of January 1, 1891, addressed to officers and members of clubs, in which it is stated that the conference was organized December 4, 1890, and all are asked to co-operate, in these words: "We desire to secure the co-operation of every society and club in America, and trust that your organization will join the movement and become members of the conference."

Mention is made how members may be admitted to the conference, as will be seen in Section 1, Article 3 of the By-Laws given below.

The circular states that in accordance with this section "it is desirable that clubs send in their applications to the council before the second Wednesday in February (February 11, 1891), when the council will meet to act upon such applications. Clubs taking advantage of the February meeting will be prepared for full representation at the annual meeting in April by delegation.

"The attention of members of clubs is called to the clause providing for their admission as subscribing members by making application to the council through the secretary. The dues are three dollars, payable annually; the subscribing member has all the rights and privileges except that of voting. Amateurs not members of clubs are also eligible for subscribing membership. Clubs and members joining at or previous to the first annual meeting will belong to the honor roll by being designated in the published list as founders.

"While the advantages to clubs and amateurs of joining the National Association is

evident to all, yet the council believes that this interest exceeds the limits of the social, scientific, and educational influence that naturally results from the meeting of those associated by a common motive. It is the desire of the council to give this a closer personal interest by bringing before the annual meeting a scheme for the establishment of a great CENTRAL BUREAU of information, where members will have the advantages of the latest advances in photographic art, and can have plates, apparatus, and processes tested for their individual instruction; in connection with this, to establish a general Purchasing Agency, where clubs, by consolidating their orders through one channel, may gain evident trade advantages.

"By earnest co-operation, each one contributing his mite to the general good, the American Photographic Conference will not only contribute materially to the advance of photographic science and art, but will also insure to its individual members a full measure of pleasure and profit in the practice of a rational, health-giving, and delightful amusement." [Here follow the names of the council, with seal of Conference.]

Quite an elaborate souvenir of the first meeting of the conference in December is being gotten up to contain illustrations of the officers. From what we have seen of it we would call the attention of the secretary to one or two corrections in the names of clubs. Instead of the "Hartford Camera Club" it should read "Camera Club of Hartford," and instead of "Robert Redfield" of the "Philadelphia Camera Club" (there is no such club), it should read "Robert S. Redfield" of the "Photographic Society of Philadelphia." We hope when matters of names of clubs come up in future, sufficient time will be taken to see that they are correctly given. We give below the full text of the Constitution and By-Laws of the Conference:

CONSTITUTION.

ARTICLE I.

TITLE.

SECTION 1. This Association shall be known as THE AMERICAN PHOTOGRAPHIC CONFERENCE.

OBJECTS.

SEC. 2. The objects of this organization shall be the promotion of the science and art of photography and of the sciences and arts allied thereto, and to encourage and facilitate the practice of photography separate from its trade, commercial or professional relations.

ARTICLE II.

MEMBERS.

SECTION 1. The members of the American Photographic Conference shall consist of delegates, subscribing members, and honorary members. Delegate Members are elected annually to serve one year by each club, society, or section entitled to representation in this organization, in the proportion of not more than one delegate for each five members of such subordinate body. Delegate Members shall have the privilege of voting upon all questions at the annual meetings of this Conference, and elect the officers of the same.

SEC. 2. Subscribing Members are those who are elected to membership by the Council on presentation of evidence of eligibility, except when such Subscribing Member has previously served as delegate; when he becomes a Subscribing Member by the payment of his annual dues. Subscribing Members are not entitled to a vote.

SEC. 3. Ladies are eligible to membership in this organization in any of these classes of membership.

SEC. 4. Honorary Members shall consist of distinguished foreign or American photographers, who shall be nominated by the Council and elected by the Conference, but not more than three Honorary Members shall be elected at any annual meeting. They shall enjoy all the privileges of other members, but shall not be required to pay annual dues or be allowed to hold any office or cast any vote.

ARTICLE III.

OFFICERS.

SECTION 1. The officers of the Conference shall be a President, two Vice-Presidents, a Secretary, and a Treasurer, who, with ten other members, shall constitute the Council. They shall be nominated in open meeting, and shall be elected by ballot. A majority of votes cast by the Delegate Members shall constitute an election.

SEC. 2. The officers shall enter upon their duties immediately before the adjournment of the meeting at which they are elected, and shall hold office one year. *Except* that the officers of the first meeting shall be elected as the first order of business after the adoption of this Constitution and By-Laws at the inaugural meeting.

SEC. 3. Any vacancy occurring between the annual meetings shall be filled *pro tem* by the action of the Council.

All officers shall be eligible for re-election.

ARTICLE IV.

MEETINGS.

SECTION 1. This Conference shall hold an annual meeting, at such time and place as shall be determined by the Conference at the previous annual meeting. The meeting shall continue three days, unless otherwise ordered by the Council.

ARTICLE V.

AMENDMENTS.

SECTION 1. This Constitution may be amended by a two-thirds vote of the delegates present, at an annual meeting, provided that notice of the proposed amendment has been given in writing at the annual meeting next preceding, and the same has been printed in the notification of the meeting at which the proposed amendment shall be voted upon.

BY-LAWS.

ARTICLE I.

PRESIDING OFFICER.

SECTION 1. The President and Vice-President shall perform the duties usually belonging to their respective offices.

SECRETARY.

SEC. 2. The Secretary shall attend all meetings of the Conference and of the Council, of which latter body he shall be *ex-officio* clerk, and shall keep a record of the official action of the same, which he shall present at each annual meeting. He shall notify all candidates for membership of their election. He shall send notifications of the annual meetings and of meetings of the Council, and attend to the printing and distribution of programmes of annual meetings and exhibitions, and collect all dues and pay the same to the Treasurer.

TREASURER.

SEC. 3. The Treasurer shall receive all money and keep the account of the same; pay all debts by order of the Secretary, countersigned by the President, and shall make a report of the same at each annual meeting, which shall be referred to an Auditing Committee of three members appointed by the President, but who shall not at that meeting be members of the Council.

ARTICLE II.

COUNCIL.

SECTION 1. The Council shall meet at the call of the President, or of any three members; notice of said meeting being sent to each member two weeks prior to the date of meeting.

Five members shall constitute a quorum.

It shall have the management of the business of the organization, subject to the action of the Conference at its annual meetings, at which, through the Secretary, it shall make an annual report.

It shall arrange the order of business, and of reading of papers at each annual meeting.

It shall make suitable arrangements for the Annual Photographic Exhibition; publish the annual volume of transactions; distribute the same to members, and provide for its sale.

It shall cause to be edited and printed in each volume, an epitome of the progress of Photography for the previous year.

It shall have power to reject any paper read, or discussion had, at an annual meeting, as it may deem for the best interest of the Conference.

It shall act upon the application of candidates for subscribing membership, and upon the application of all clubs or societies to representation.

It shall have power to drop all delinquent members from the roll of membership, and try all offending members.

It shall not have power to make the Conference liable for any debts exceeding the sum of two

hundred dollars in any one year, except when specially authorized so to do by the vote of the Conference.

ARTICLE III.

ADMISSION OF PHOTOGRAPHIC CLUBS OR SOCIETIES.

SECTION 1. Photographic clubs or societies, or sections of societies, may apply for representation in this organization to the Secretary, stating their name, locality, object, or such other facts as may be required of them, which, if approved by the Council, shall be nominated by them at an annual meeting, when, if elected, they may continue in affiliation by sending delegates each year to the annual meeting. No society shall be deemed eligible that is engaged in photography as a trade, or is exclusively composed of members so engaged.

PAPERS.

SEC. 2. The title of all papers to be read at an annual meeting shall be forwarded to the Secretary not later than six weeks prior to the first day of meeting, and when read shall be handed to the Secretary in completed form, ready for the printer.

PROOFS OF PAPERS.

SEC. 3. The Secretary shall forward to each reader the printed proof of his paper, to be corrected but not added to, the same to be returned to the Secretary within ten days, when, if not so returned, the Secretary may correct without the approval of the author.

ARTICLE IV.

ANNUAL EXHIBITIONS.

SECTION 1. At each annual meeting there shall be an exhibition of Prints, Negatives, Transparencies, Lantern Slides, and of Photographic processes or appliances which shall be the work of members of this body, or of societies in affiliation therewith, under the supervision of the Council, which shall have power to reject any exhibit that it may deem not for the best interest of the exhibition or for violation of its rules. The Council shall issue direction for the mounting and framing of exhibits, and direct the display and hanging of the same. No competitive exhibition or awarding of prizes or premiums shall be allowed.

TRADE EXHIBITIONS.

SEC. 2. The Council may invite manufacturers and dealers to exhibit photographic apparatus, appliances, chemicals, etc., and demonstrate the working of the same at each annual meeting, under such supervision and rules as the Council may direct, provided that such exhibition is detached and wholly distinct from the official exhibition of this organization. It shall not be lawful to award prizes or premiums at such exhibitions, nor shall any exhibitor be allowed to exhibit a finished print.

ARTICLE V.

DUES.

SECTION 1. The dues for each Delegate and Subscribing Member shall be three dollars annually, payable at each annual meeting. Any member who shall be six months in arrears shall be notified by the Treasurer, when, failing to remit the same after such notification, he may be dropped from the roll of members by vote of the Council.

ARTICLE VI.

AMENDMENTS.

SECTION 1. Amendments to the By-Laws may be made at an annual meeting of the Conference, by a two-thirds vote of the Delegate members present, provided that such proposed amendment be first referred to the Council and reported back with its recommendation to the Conference.





INDEX RERUM PHOTOGRAPHIC.

BY DR. JOHN H. JANEWAY, U. S. A.

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By the third process the blocks can be printed as ordinary type. There are also processes by which the true tone can also be given, and are most useful in producing plain maps, pen and ink drawings. By these means artist drawings on white paper with black ink may be reproduced with absolute accuracy, without his depending upon the wood engraver to interpret them, and are therefore rapidly superseding wood engraving. For further information on this very interesting subject consult Burton's "Photo-Mechanical Printing Processes," Burbank's "Photographic Printing Methods," and Vogel's "Progress in Photography."

BLOCKING OUT—It is oftentimes essential to block out skies or other surroundings not required in the finished picture. The following method will be found to answer the purpose very well. Take a piece of India ink and, with a little water, rub on a pallet, with the admixture of a small quantity of orange chrome, until the substance becomes sufficiently opaque. To ascertain this, apply a little with a brush upon a piece of clear glass. By this mixture, applied with a hair pencil, any outline or delicate part of the negative can be effectually traced over, and thus blocked out with ease. Should any mistake have been made, and too much of the picture covered over, the damp corner of a cloth or a piece of rag will soon remove the color and restore the desired part.

BLUE PRINTS—Originally used for copying mechanical and other drawings, but now extensively for landscape proofs, etc. This process depends upon the well known fact that the ferric salts are, by the action of light, reduced to ferrous salts, which are capable of being acted upon by various toning agents: potassium ferri cyanide, gold chloride, platonic tetra chloride, mercuric chloride, potassium bichromate cupric chloride, etc. Sir John Herschel's investigations showed that the double salt citrate of iron and ammonia was the one most readily to be acted on by light, and it is the one most usually used as the sensitizer, and the developing solution most commonly used is potassium ferri cyanide, or red prussiate of potash. Two methods are used. First, coating well sized paper with a solution of citrate of iron and ammonia, 154 grains; distilled water, 25 drams, either with a brush or sponge, or floating the paper on the solution from one to three minutes and when dry exposing under a negative until a faint image is visible. If a blue image is desired, immerse the paper in a solution of potassium ferricyanide, 1 to 10. When the image is fully toned wash well in water, adding a little acetic or citric acid to the first bath. If the crysotype or purple image is desired, immerse the print in a neutral solution of

chloride of gold, 1 grain to 4 oz. of water, fix in a bath of dilute hydrochloric acid, and then wash well. Other tones may be produced by substituting the chlorides of the other metals for gold, using about the same quantity as in the gold solution, always using acid bath, together with free washing. But the more usual method is to combine the sensitizing salt with the developer. To obtain the best results it is necessary : First, to have the chemicals pure. Second, the paper free from deleterious matter. Third, the paper should be well sized and then sensitized in dim light. Fourth, a few grains of bromide added to the solution insures greater keeping powers to the paper and adds density. Fifth, the first wash should contain a little citric, acetic, or hydrochloric acid, and the prints must be well washed. The following formula, chosen from a number, will be found good : 1. (a) Red prussiate of potash, 1 oz. ; water, 8 oz. (b) Citrate of iron and ammonia, 1 oz. ; water, 2½ oz. One part of *a* to two of *b*. 2. (a) Red prussiate of potash, 48 grains ; water, 1 oz. (b) Citrate of iron and ammonia, 64 grains ; water, 1 oz. For dense negatives use 108 grains of the citrate of iron and ammonia. Keep the solutions separate and in the dark until wanted, then mix *a* and *b* in equal parts, or one part of *a* with two parts of *b*, as more or less intense prints are desired. 3. (a) Citrate of iron and ammonia, 1 7-8 oz. ; water, 8 oz. (b) Red prussiate of potash, 1 1-4 oz. ; water, 8 oz. Mix equal parts when wanted. 4. (a) Citrate of iron and ammonia, 5 1-4 drams ; water, 5 oz. (b) Red prussiate of potash, 6 1-4 drams ; water, 7 oz. Mix equal quantities immediately before using. 5. (a) Citrate of iron and ammonia, 2 oz. ; water, 8 oz. (b) Red prussiate of potash, 2 oz. ; water, 8 oz. Mix *a* and *b* in equal parts just before using. Keep all these solutions in the dark. A few grains of a bromide will improve all the above formulæ. To sensitize the paper—the paper for blue prints : Lay it on a sheet of clear glass, clipping or fastening it at the corners, and apply the solution by means of a piece of soft sponge. The sponge, after being dipped in the solution, should be squeezed moderately dry, and applied to the upper left hand corner, and carefully drawn over the paper from left to right, and so on all down the sheet. The sponge being treated as before, go over the paper at right angles to the first coating. Avoid all streaks, which will occur if the sponge is too wet. Dry the paper in the dark and it is ready for use. Print until the shadows are bronzed. The prints should be washed in several changes of water, not omitting the acid in the first bath. If the sky and highest lights are perfectly white, the color in other parts can be deepened by immersing for a few seconds in the following solutions : Saturated solution of sulphate of iron, 4 oz ; sul-

phuric acid, 4 drams ; water, 4 oz.; or in acetate of lead, 2 oz.; water, 8 oz. To give the prints a green tone print rather light, wash well, and immerse in water, 8 oz.; sulphuric acid, 1-2 dram. By soaking them in tannic acid, 1 dram; water, 4 oz.; for five minutes, then immersing them in carbonate of soda, 1 dram ; water, 5 oz., for one minute, and then return them to the tannin bath, and so on until they assume a deep warm color, then wash; they may, by this procedure be changed to an almost black color. There are various other modes of changing the color and tone of these prints, and it will repay the amateur to experiment further.

Blue Prints on Albumen Paper—Very pretty effects may be produced by printing on albumen paper, especially if the albumen is previously coagulated by alcohol previous to sensitizing. Sensitize with the following solution : Citrate of iron and ammonia, 3 3-4 drams ; water, 2 oz.; red prussiate of potash, 2 1-2 drams ; water, 2 oz. Mix equal parts just before using. Float the paper as on a silver bath, albumenized side down, for 30 seconds, withdraw and suspend by one corner to dry, and use soon. These prints can be mounted and burnished. All ordinary blue prints are enhanced in appearance by the use of this simple encaustic paste : White wax, 1 oz.; spirits of turpentine, 1 oz. Melt the wax and add the turpentine while hot, rub it over the surface of the print with a piece of flannel, and then polish with another clean piece of flannel until the print assumes a burnished appearance. Blue prints may be bleached in the following simple way : Overprint to get the half tones and details, which can only be obtained by overprinting, and after they are well washed, use a large tray containing liquor ammonia, 1 dram ; water, 8 oz.; place the prints carefully into it, so as to cover the whole print. The action is rapid, and the print on immersion immediately takes on a purplish hue, which is very beautiful for certain effects. It will then gradually fade away, changing to almost the original coloring, and if allowed to remain in the solution, the blue will bleach out entirely. It rests with the operator when to remove the print, watching it carefully for the proper tint. If the solution acts too fast, add more water; if the reverse, add a few more drops of ammonia.

BLUE—Positive or transparencies—May be made either by utilizing plates or films that have been light struck or otherwise damaged, immersing them in the fixing bath to dissolve out the silver and then sensitizing as for prints, or by coating the clear glass or celluloid sheet with a gelatine solution. Gelatine, 140 grains, soaked for one hour in clear water, then when well drained and pressed,

dissolve it in 21 1-2 oz. of water, and filter. Heat the solution to 120°—129° F., and apply a coating to the plate or celluloid, which in cold weather should be previously warmed. When evenly spread on the plates. place them on a true horizontal table, where they are to remain until the gelatine no longer runs. They are then racked to complete the drying, which will require at least twelve hours. If properly protected from dust and moisture, they will keep indefinitely. The sensitizing solution is filtered into a tray, and the plate of celluloid is plunged into it, care being taken to avoid air bubbles when they remain five minutes. It is best to sensitize at night by lamplight. The day following they will be dry and ready for exposure. The exposure necessary is about double that required for albumen silvered paper. An exposure on the blue paper will give a fair average. After exposure wash as usual.

BLURRING—When the image presents an indistinct or double outline it is said to be blurred, and this defect may be produced by three different causes. First, the plates (very thin emulsion film, weak in iodide of silver), owing to their transparency and the consequent reflections of light from the back of the plate. Second, movement of the object, and lastly, movement of the camera by high winds, jarring from the shutter or other causes.

BOLAS PROCESS, THE—The reproduction of negatives from negatives by means of gelatine plates. A gelatine plate is dipped into a 4 per cent. solution of bichromate of potash, and afterward in a 50 per cent. alcoholic solution for a few seconds. The plate is then laid flat, blotted off with bibulous paper, and dried in the dark, then exposed under a negative about as long as required by a carbon print. A visible positive image is formed, after which the plate is washed in water and developed with pyro and ammonia. The image then changes to negative and is fixed as usual. Captain Bury has improved the above process and thereby obtains either positives or negatives.

BOOK MAKING BY PHOTOGRAPHY—In a general way the process is understood by many, but the especial features that make it valuable are secrets carefully guarded by a few. As soon as it is determined to reproduce a book by this process, it is ripped apart and its pages are put in fixed places before a number of cameras already focused, as many negatives are made in a few moments. Each negative is transferred to a transparent rubber film which is stripped from the glass and used to print from, after which it is laid aside like a sheet of paper, and can be kept indefinitely. The printing is done upon heavy sheets of gelatine from 1-32 to 1-10 of an inch thick, prepared

with bichromate of potash and other chemicals. Ten pages are thus reproduced at once upon each sheet of gelatine. The portions of gelatine upon which the light has not acted are easily washed out with brushes and warm water, leaving the letters, pictures, or other photographic images in bold relief. Only from six to eight hours are required to dry the plates perfectly. It is said that 200,000 clear impressions can be made from these if not touched by water or subjected to excessive heat. The relief is equal to that of ordinary type at least, and the outlines are sharp. Enough has been told to show how cheaply and rapidly the work can be done.

Books—A decade and a half ago it would have been a very easy task to enumerate all the books extant on the subject of photography, but now it would be impossible to do so in an article of this kind. Still it seems necessary to furnish a list of some of the books that should not only adorn the shelves of, but be the constant companions of all earnest workers of our art. Without any intention of slighting any, I shall mention those I am most familiar with:

A History of Photography. W. Jerome Harrison.
Burnet's Hints on Art or Art Essays.
Book of the Lantern. T. C. Hepworth.
Chemistry of Photography. Meldola.
Dry Plate Making for Amateurs. Geo. L. Sinclair.
Hardwick, Photographic Chemistry.
Hearn's Studies in Artistic Printing.
History and Hand Book of Photography. Gaston Tissandier.
Letters on Landscape Photography. H. P. Robinson.
Modern Dry Plate or Emulsion Photography. Dr. I. M. Eder.
Photographic Negative, The. W. H. Burbank.
Photographic Printing Methods. W. H. Burbank.
Photography with Emulsions. Capt. Abney.
Photographic Instructor. Prof. Ehrmann.
Pictorial Effects in Photography. H. P. Robinson.
Practical Guide to Photo and Photo Mechanical Printing. W. R. Burton.
Practical Photo Micrography. Andrew Pringle.
Photo Engraving, Etching, and Photo Lithography. W. T. Wilkinson.
Processes of Pure Photography. W. K. Burton and Andrew Pringle.
Progress of Photography. Dr. H. W. Vogel.
Retouching, The Art of. Borrows and Colton ; I. Pourdan.

And especially would I recommend :

Wilson's Photographics and Quarter Century Annual and Monthly Publications.

The American Annual of Photogarphy. Scovill, Adams & Co.

The International Annual, Anthony's.

Photographic Mosaics. Wilson.

The American Amateur Photographer.

Wilson's Photographic Magazine.

American Journal of Photography.

Anthony's Photographic Bulletin.

The Photographic Times.

BREADTH OF EFFECT—Is a term applied when a great extent of light and shade pervades the picture. Open daylight appearance is best produced by leaving out the middle tint and allowing a greater spread of light and half light, and the dark shade should be sharp and cutting. This gives the darks the relative forces which they possess in nature. If breadth of shadow is wanted, the picture should be made up of middle tint and half dark, and the lights appear brilliant, enveloped in a mass of obscurity.

BRENZ-CATECHIN, PYRO-CATECHIN— $C_6H_4(OH)_2$.—The prefix *brenz* and *pyro* are synonymous, meaning that the substance is formed with the aid of heat. English chemists call this substance "catechol." Said to be a very active developing agent. When compounded similarly as a hydro-quinone developer, it is said to produce the required degree of strength quicker. By some it is stated that, though much dearer, it is fifteen times stronger than hydro-quinone, and therefore it is cheaper, if not more so.

BRILLIANCY—In plates and prints, mean that they are distinguished by qualities which excite admiration. That the lights and shadows are in accord and are properly balanced. That there is no veiling of the details by incipient fog, and that, in fact, it is a matter of intensity supplied by sunshine in its most varying forms. Consequently, the resultant prints must be as, or nearly as perfect in the rendition of light and shade, and especially effect, as the negative. To obtain this a careful study of light and shade is required, together with painstaking development and the other necessary manipulations.

BROKEN NEGATIVES—Should such an unfortunate accident occur, leaving the film intact, the film may be removed from the glass and transferred to another by using a dilute solution of hydrofluoric acid, or by other methods recommended for that purpose. But

(To be Continued.)

BOOKS AND EXCHANGES.

The *American Journal of Photography* begins the new year in a new dress. Larger type and heavier paper have so changed our old friend as to make it almost unrecognizable. We congratulate our contemporary on the well deserved prosperity which has made these improvements possible. The *Beacon*, too, has felt the touch of the hand of improvement, and comes out as an illustrated monthly, increased in size and with the subscription advanced to \$1.50, giving good value for the money.

AUSFÜHRLICHES HANDBUCH DER PHOTOGRAPHIE. Von Dr. Joseph Maria Eder; Halle A. S.; Wilhelm Knapp, 1890.

The sixth part of this exhaustive treatise, now on our table, contains chapters on the comparative sensitiveness of different photographic preparations, photography as influenced by meteorological and climatic conditions, and astronomical photography, all of which are treated in the accurate and exhaustive manner characteristic of the author. It is a pity that we have no such exhaustive works in English.

The *Photographic Times* for January 2d contains a fine photogravure reproduction of a striking picture by F. W. Guerin, entitled "Cupid After Wings." The "Times" is generally fortunate in its reproductions, but this is an unusually good specimen.

The frontispiece to *Wilson's Photographic Magazine* of January 3d, shows six ideal mythological studies made by Charles W. Hearn. Technically the prints are all that could be desired, but as ideal conceptions they fall far behind those which the great masters of sculpture have given us of the same subjects. Indeed we doubt if photography, with its literal rendering of faces, can give us satisfactory representations of the ideal, which seems to demand the free rendering of imaginative conceptions, not the literal translation of actual facts. Modern imitations of Grecian drapery do not make an ideal statue. Nevertheless, Mr. Hearn is entitled to great credit for his attempts to exploit a difficult field for photography.

Outing for February contains an instructive article entitled, "Amateurs and the Art of Daguerre," by Mr. Clarence B. Moore, which contains much sound advice. The illustrations add greatly to the value of the text. *Outing* is too well known to need any commendation from us, but we desire to call attention to our special clubbing rate which enables us to furnish the two magazines for \$3.00, the regular price of *Outing* alone. This opportunity is too good a one to be neglected and we advise intending subscribers to take advantage of it at once as it will soon be withdrawn.

PICTURES IN BLACK AND WHITE, OR PHOTOGRAPHERS PHOTOGRAPHED. By George Mason, "Mark Oute." New York. E. & H. T. Anthony & Co. 50 cents.

This is a collection of pleasantly written sketches originally contributed to the columns of the *British Journal of Photography*. Mr. Mason has an entertaining vein of humor and these sketches of photographers of other days are pleasant reading.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

An Old Firm Under a New Name.—The well-known firm of C. H. Codman & Co. will henceforth be known as Horgan, Robie & Co., Mr. John Stalker having been taken into the firm. The change is one of name, not of *personnel*, and the business will be continued at

the old stand, No. 34 Bromfield Street, Boston, Mass. The firm has always enjoyed an excellent reputation for fair dealing, and no efforts will be spared to keep the house well to the front in photographic stock matters.

From A. M. Brown, Rochester, N. Y., we have received a sample package of the "Peerless" aristotype paper. Our trials of the paper have been quite satisfactory, and if the directions are carefully followed there would seem to be no difficulty in obtaining good results.

J. F. Lloyd sends sample boxes of A. Peebles Smith's "Vest Pocket" eikonogen developer which the few trials we have been able to give it prove to be an excellent developer. The eikonogen, with a preservative added, we presume, is contained in one small box and the alkali in another, making a convenient and compact method of carrying the developer on a trip.

W. H. Walmsley, Ltd., send a sample box of their new "Graphol" developer. All the ingredients of the developer are powdered and done up in paper wrappers like the well-known Siedlitz powders, each wrapper containing sufficient powder to make four ounces of normal developer, although this proportion is easily changed to meet special cases. We have not had time to experiment largely with "Graphol," but such experiments as we have made have been favorable. The powders are said to keep well, but of this we have no personal knowledge. The same firm send their new illustrated price-list containing cuts and descriptions of all the best lines of apparatus and accessories and Walmsley's well-known photo-micrographic outfit.

Prizes for Dry Plates.—The Monroe Dry Plate Works of Jamestown, New York, have offered \$100 in prizes for the best flash-light photograph made on a particular brand of plate. This is an old yet not new way to introduce a new plate.

United States Photographic Patents

Issued in January, 1891.

JANUARY 6th.

- 444,083—Photographic Shutter. E. Bausch, G. Hommel, and A. Wollensak, Rochester, N. Y.
 444,084—Enameling photographs and other prints. C. C. F. Brandt, Muscatine, Iowa.
 444,361—Photographic Camera Shutter. G. F. Kincaid, San Francisco, Cal.

JANUARY 13th.

- 444,422—Photographic Apparatus for Holding and Developing Dry Plates. G. H. Cobb, Elmira, N. Y.
 444,487—Coin-Controlled Automatic Photographic Apparatus. E. G. Fisher, Minneapolis, Minn.
 444,535—Photographic Apparatus. L. Lumière, Lyons, France.
 444,714—Photographic Objective. P. Rudolph, Jena, Germany.
 444,806—Photographic Camera. E. B. Barker, Newark, N. J.

JANUARY 20th.

- 444,951—Process of Preparing Plates or Surfaces for Ornamentation. H. Goodwin, Newark, New Jersey.
 444,952—Process of Preparing Plates for Utility and Ornament. H. Goodwin, Newark, N. J.

JANUARY 27th.

- 445,188—Artificial Light for Photography. T. H. McCollin, Lansdowne, Pa.
 445,232—Photographic Apparatus. C. Pasquarelli, Torino, Italy.



BY WM. M. BROWN.

PLAYING HOCKEY.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

BOSTON, MASS., MARCH, 1891.

No. 3.

Our Illustration.

"PLAYING Hookey" is presented to our readers as a suggestive example of "genre" photography, with the hope that it may inspire some of our readers to adventure on this attractive field. A quick artistic sense is essential to success in this class of work, and the courage to attempt difficult combinations and situations. Mr. Brown has achieved a success in "Playing Hookey," and we are fortunate to be able to reproduce so successful an effort.

♦♦♦

Intensification.

By J. C. HEGARTY.

THE amateur just entering into the fascinating pursuit of photography is often beset by many difficulties, and has many discouraging results. Foremost among these results are thin negatives. He is prone to over-expose his plates to make sure that he will secure all of the detail in the beautiful scene before him, and in developing he often fails to secure sufficient density, his negative is full of detail, but too thin to give anything but a flat print lacking contrast, he must then have recourse to intensification, by which the density of the negative is increased and the contrasts heightened. But the tyro is not the only one who profits by intensification, for no matter how expert the camerist may be, he will occasionally over-expose, and again in development a plate will refuse to acquire sufficient density, and no amount of care or patience will remedy the evil. Professional photographers frequently intensify. A professional of my acquaintance, who is favorably known for the fine quality of his work, said that he "strengthened" a great many of his negatives. So the amateur need not hesitate to use that which the professional finds is an advantage. I think if intensification was more generally employed fewer flat prints would be shown, and fewer negatives cast aside as worthless. In the process of intensification the bichloride of mercury



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combines with the silver and forms a more opaque deposit on the negative. The intensifying solutions act in proportion to the amount of silver contained in the different parts of the film, the high lights becoming the more intense as they contain the most silver, while the shadows containing less silver are not so much effected, and by that means the contrasts are increased.

Thin negatives, caused by over-exposure or under-development, are improved by intensification, the high lights becoming more intense and the negatives more vigorous. Under-exposed negatives are often thin but the details are very imperfect; if slightly under-exposed they may be somewhat benefited by the same procedure, but if much under-exposed they should be cast aside, as intensification will not add detail to the negative, although it sometimes appears to from the fact that the contrasts are increased and the detail made more apparent. The most important part of the process is the thorough elimination of hypo from the negative, for should any hypo remain in the film, staining will surely result, the bichloride of mercury solution will become milky, and a white precipitate is formed which injures the working qualities of the solution. The necessity of thorough washing cannot be too strongly impressed on the mind of the beginner. Many amateurs fail in their efforts at intensifying because their negatives are imperfectly washed. Frequently after developing and fixing a negative they find it is too thin to give anything but a weak print, they are disgusted and do not take the trouble to thoroughly wash the negative but cast it aside. Some day they conclude to do some intensifying when the thin negative is gathered up, given a slight washing under the tap and intensified, but the result is a spoiled negative, and the amateur concludes that he cannot intensify, but intensification is not so difficult a process as some imagine, but, like all photographic work, it requires care and close attention.

First, to insure success all negatives should be thoroughly fixed. It is a most excellent idea to use two fixing baths, leaving the negative in the first until it is clear, then placing in the second bath for a few minutes, this insures thorough fixing and the hypo is easier eliminated. After fixing, the negative should be washed in running water for at least an hour. This completes the work on the negative, but if afterwards intensified it should receive another washing. There are several different modes of intensifying, and formulas for intensifiers are numerous. I have tried quite a number of different ones with varying success. My first experience was with bichloride of mercury and ammonia, which I was advised to use by a professional. This method may have worked very well for my professional friend, but I was not satisfied with the results, and, like the average amateur, I began to experiment. I tried various formulas which gave me good and bad results. The methods with gallic acid and silver I could not recommend to the beginner on account of their liability to stain the film, and a tendency to fog the negative. I had fair success in using mercury and sulphite of soda. I found the sulphite of

soda superior to ammonia for blackening the white deposit. It does not change the color of the negative as does ammonia, and is more easily controlled. It also has the recommendation of being permanent. The method with mercury and iodide of potassium, although highly spoken of, I did not like so well as some others. The negatives intensified by this method sometimes turn yellow in time and become slow printers. The uranium method works very well with some negatives but for all work it is not as satisfactory as some others. During my experiments I tried the cyanide of silver intensifier. After giving it a thorough trial and comparing plates so intensified with those by the other methods I found that it gave the best results. For some time past when I have had occasion to intensify I have made use of it, and always with satisfaction. It is easily controlled, quick in action, and gives a negative of a rich blue color which is desirable for quick printing. The solutions can be used repeatedly until they cease to act. For use prepare the following solutions:

- | | |
|-----------------------------------------------|------------|
| No. 1.—Bichloride of Mercury, | 96 grains. |
| Bromide of potassium, | 96 grains. |
| Distilled water, | 12 ounces. |
| No. 2.—Crystallized cyanide of potassium, . . | 90 grains. |
| Nitrate of silver, | 96 grains. |
| Distilled water, | 12 ounces. |

The solution should stand a couple of days before being used. Take the negative, which we will conclude was perfectly fixed and thoroughly washed at the time it was developed, and wash for twenty minutes under the tap, then place in a tray containing sufficient of No. 1 to cover the plate, and rock the tray gently. If only required to strengthen the negative a little, it should be allowed to act until the plate is gray on the surface, but if the negative to be strengthened is very thin and it is to be strongly intensified, the solution should be allowed to act until the plate is well grayed over and the film whitened through to the glass. The plate is then removed and thoroughly washed in running water to remove all the mercury solution, then immersed in No. 2, where it quickly changes, and where it should remain until all the grayness has disappeared from the back, when it should be removed, as the solution would then begin to reduce the density, then give the plate a final washing, which should be thoroughly done to insure permanency. For the secret of success in intensifying is the use of plenty of water to eliminate all of the chemicals from the film.

Caution should be observed in using this intensifier, as both solutions are deadly poison. It should not be used by a person having any cuts or sores on the hands. The same warning will apply to the use of other intensifiers as the bichloride of mercury is an active poison.

While advocating the use of intensification it must not be understood that I advise the beginner to rely on intensification as a remedy for defects which might be avoided in exposure and development. All efforts should be made

toward securing a perfect negative, when it will be found that a negative which has been correctly exposed and properly developed will require no intensifying.

Animated Life in Landscapes.

By H. J. BUNTIN.

(Concluded.)

JUST think for a moment; nearly all the literature, both prose and poetry, now existing throughout the libraries of the known world, is made up of stories, descriptions, and explanations of the different phases of Animate Life. The most wonderful and most noted paintings in all the great galleries are made so by the figures they contain. The celebrated "Angelus," recently sold for \$140,000, would never have been known but for the figures of the two peasants bowing in humble devotion at the sound of the church bell. What is it that to-day makes the name of George Kennan famous the world over? Is it his word pictures of the mountains, the rivers, the bleakness, and the wastes of Siberia? No; it is his realistic descriptions of the physical sufferings, the mental sorrows, and the sublime heroism of the poor convicts who are banished beyond the Ural Mountains. Take from Kennan's Siberian pictures all that relates to Animate Life, and what have you left? Comparatively nothing.

Why is it that Grecian and Roman mythology is found running through the literature of every age? Because it takes inanimate objects, passions, ideas, etc., and endows them with Animate Life. War is made a god and given a new name; the destiny of man is personified by the three figures called the Fates. The moonlight stealing among the rocks and trees as beautiful Artemis will always be a more striking picture to the human mind than the material, lifeless fact upon which it is founded.

Shakespeare well understood this witchery of producing telling effects by breathing the breath of life into inanimate objects. His works are full of it. Take one example from "Hamlet," describing the approach of day: "The morn, in russet mantle clad, walks o'er the dew of yon high eastward hill." Suppose he had written it thus: "The first rays of the morning sun are lighting up the dew-drops on yon high eastward hill"? The meaning is the same; but what a loss of dramatic beauty there would have been. Morning as an animate being, clothed in a russet mantle and walking o'er the dew-drops, carries with it an interest to the human mind that no words can explain.

What names were given to the planets and the stars; those of rocks, rivers, hills, forests, or oceans? Oh, no; they were personified. We have Venus, the Seven Sisters, Jupiter, Orion, etc. A certain constellation has two names; but it is more to us as the Great Bear than as the Dipper. A dipper is a lifeless object which hangs up there ready to use, and that is the

[Paper read before the Cincinnati Camera Club, November, 1890.]

end of it; but the Great Bear, with huge paws uplifted and fierce eyes glaring, ranging through millions of worlds and in infinite space, is food for the glowing imagination of the mortal mind.

H. P. Robinson says that "Landscape without a figure is a suggestion unfulfilled, a fitness unused, an opportunity wasted." This is strong language from an eminent authority; but the more you consider it, the more you will agree with him. Robinson also says: "The figure should be not only in the picture, but of it." That is, it should be so connected with the surroundings as to give value, support, and distinction to the composition. The pose, costume, and location of the figure should be such as to hide the fact that the figure has any consciousness of what the photographer is doing.

It is a rule of composition to place the figure at some point which shall be at unequal distances from the top, bottom, and sides of your picture, and not in the center. We are also told to avoid perpendiculars and horizontals and cling to diagonals. This is a golden rule when applied to the arrangement of your fences, your bridges, your roadways, etc. Never allow them to cut the effect into stated portions, up or down, or straight across.

If a story is sought to be told, the figure should be well up in the foreground. If you desire to make the figure subordinate to its surroundings, place it farther away.

The point intended to be emphasized by this paper is this: No landscape is perfect that contains no phase of Animate Life. Now don't misunderstand the statement. Beautiful pictures of valley and hill, of sea and sky, can be, and are, made without Animate Life being shown; but our proposition involves a perfect landscape—something rare as diamonds and more precious than gold. Take the finest combination of light and shade, of water and land and clouds that ever was photographed, and you can add an additional interest to it by judicious and artistic introduction of Animate Life, which carries something with it not there before. Therefore, the logical sequence follows: that to which anything more can be added is not yet perfect.

Experience will teach the amateur who is dealing with figures in landscapes the necessity of quick decision. Train your eye to see picturesque combination instantly. In so far as this rule really conflicts with the "take one every two hours," recommended in the brilliant paper read before us some time since, we must take issue. The author of that paper, however, was endeavoring to give us a wholesome check against promiscuous firing away without aim or purpose, and he was right in that respect. But the photographer who desires pictures wherein Animate Life is an element of the composition, must be able to "take one every minute," if necessary. This training the eye to quick decision is a good thing in all kinds of landscape work, because the changing of the atmosphere, the strength of light, and the direction of shadows often play important parts in your success or failure. As has been stated, this is especially true where figures are concerned.

Several months ago a lady and gentleman with their cameras were riding

along a country roadway in the State of California. They had just crossed a small wooden bridge or culvert when one of them, looking back, discovered a drove of cattle coming slowly up the road, from which clouds of dust were rising in the air and gently floating away. These photographers were not bound by the "take one every two hours" rule, but instantly recognized a golden opportunity, stopped the team, jumped out, and planted their cameras on the double quick, drew their slides and made exposures before the cattle had time to come too near.

The result was shown at our print exhibit in this city a few weeks since, by the title of "A Dusty Road," and it was pronounced by many as the most artistic landscape on exhibition. Suppose the artist had hesitated and considered long before deciding to make the exposure. Well, that beautiful picture would not now be in existence.

"One moment turned the golden door,
And then it shut forevermore."

In conclusion of this paper let it be said that the ideal, perfect landscape has never yet been caught on the sensitive plate by any photographer, amateur or professional.

Therefore, as we work away and do our best, the comforting thought comes to us all that we are as likely to reach the standard of excellence as any who have gone before; and no matter how high the banner of success may have been planted by the greatest endeavors, we must still remember, in the words of the King: "There is something yet beyond."

The Camera at Hot Springs, North Carolina.

By M. Y. B.

IT IS surprising how rapidly the photographic fever clutches its victims, and how numerous these victims become when an amateur carries on his pictorial work energetically among a number of observing people. While passing some months in a hotel at Hot Springs, amid the mountains of western North Carolina, the writer found abundant opportunity to use his Morrison wide-angle lens on man and beast and mountains. Fellow-guests and pet babies were photographed out-of-doors, while flash-light interiors, including whist and euchre parties, so excited the whole household, making nearly every one of the hundred or so guests eager to see what would come of the photographer's efforts, that when developing time approached the dark-room would be crowded with spectators watching for development, all ready to sigh or to shout for joy in case of failure or of success. "What success did you have with that picture?" was the query put to the photographer from all sides. Old and young seemed to "enthuse." The production of sharp prints was an incentive for renewed interest throughout this large household. Within several days after the amateur's arrival, the fever "to do the thing yourself" began to manifest itself. The first patient was a

retired English army officer, nearly seventy years old. He was bound to get a camera, and "would the amateur please give him a few lessons in its use?" A New York banker followed the officer. Night after night he talked lenses, cameras, plates, etc., in order to post himself on what was the proper thing to buy. To him there seemed to be a good deal of pleasure in this taking pictures at will. Then came a young woman with the most improved Kodak which she could not use very well. She wanted to develop some of the exposed film, and "would the amateur help her." Of course he would. What amateur wouldn't help a beautiful young lady develop an Eastman roll film when she appeals for assistance? This amateur, unfortunately, knew nothing about Kodak films, so he studied the manual relating to the less improved Kodaks. After struggling half a day with the blasted thing he extirpated the film and developed a number of exposures. The young lady was enthused at her pictures. So the next thing in order was to instruct her how to develop. She begins the new year enthused beyond expression.

The fourth applicant for photographic guidance was a rheumatic with a weeping eye. He was particularly impressed with some bromide prints made by the young amateur. He wanted to make some prints of his own picture from a negative secured by the amateur. These prints were to be sent home as holiday gifts. Happiness attended him. At the dinner table that day a Chicago widow—young and dashing—began a discussion with the amateur on printing methods. She had dabbled in photography. Bromide prints did not please her. They were too expensive and too much bother. Platinotypes were her hobby, and before her harangue ended New York versus Chicago, from a photographic and World's Fair point of view, was put to the test. Of course New York got left.

Next on the list was an old maid. She had an artistic streak in her make-up. Some of the amateur's bromide prints reminded her of etchings. If it was so easy to take photographs and get such "true art feeling" into them, she proposed to go at it. The amateur was proud to serve this motherly maiden. In fact it is usually an amateur's delight to be allowed to serve anybody in his line. To encourage this aspiring maiden, she was shown specimens of work done by Catherine Weed Barnes—work which was not treated right at the Washington Convention—as samples of what woman can do with the camera. The lady became convinced. She now owns fifty dollars worth of photographic outfit, and proposes to spoil lots of developer and 4 x 5 plates in acquiring the knack of picture-taking. The hotel manager has provided himself with a camera, fitted up a suite of palatial dark-rooms for the use of his guests, started a library of photographic literature, and proposes to make the art one of the features of the place.

From the amateur's experience as indicated and his experience with dozens of other guests, he is convinced that hotels are veritable hot-beds wherefrom full-fledged amateur photographers will emerge by the score, if encouraged by proper examples.

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W. H. BURBANK.

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EDITORIAL COMMENT.

Poem Illustrations.—The topic selected by the executive committee of the National Photographers' Association at Boston, for the illustration of poems for which the grand prize is to be given next summer at the Buffalo Convention, is "Elaine," from Tennyson's "Idyls of the King." Probably a brisk competition will result, and it is to be hoped the illustrations will be more in accord with the text than was the case with some of those on "Enoch Arden."

Uniformity in Lantern Slides.—A new circular received, inviting officers of societies and clubs to send suggestions to the second International Photographic Congress to be held in Brussels, Belgium, between the middle and latter part of next August, signed by Janssen, President, and Secretary M. S. Pector, of Rue Lincoln, Paris, France, supplies the opportunity for suggesting that the Congress take up the matter of having lantern slide plates made of uniform size (3½ x 4 inches), the size now so universally preferred in the United States. There are many reasons in favor of this size. Room is afforded for proper labeling and for the affixing of the thumb label;

there is also more space on each end for adjusting the mat. It is hoped the American Photographic Conference will promote the change and secure, at least, uniformity in the United States.

Naturalistic Photography.—As we go to press we have received a pamphlet by Mr. P. H. Emerson, entitled "The Death of Naturalistic Photography." The front page has a border of mourning. Somewhat sarcastically Mr. Emerson renounces all he has maintained in his book on "Naturalistic Photography," and attacks some others leaning in his direction because they do not give him credit for proposing the principles he has put forward. He claims that it is impossible by printed books to thoroughly explain his views on naturalistic photography, and for that reason wishes to throw overboard what he has heretofore described. Doubtless he has set many to thinking on the subject, so that his change of front may not have as bad an effect as it would soon after the book was published.

Care of Lenses.—We are surprised to see how carelessly photographic lenses are sometimes handled by men who do or should know better. Since so much depends on a good lens—and it is usually the most expensive part of a man's outfit—it is essential that every care should be taken of these delicate instruments. Every scratch detracts from the rapidity, as well as does every particle of dust or dirt. Nothing can be finer than the last polish given by the optician, and to preserve that as long as possible should be the aim of every owner of a photographic lens. It is the custom of the writer to have strong bags, made of a stout material, lined with chamois skin, in which to carry lenses, and to further protect the glass both ends of the mount are covered by leather caps. With such protection a lens will stand a large amount of knocking about without danger of injury. Should the glasses become dusty, a fine camel's hair brush should be used to remove it, and this dusting is ordinarily sufficient to keep the lens in good working order. Should there, however, be occasion for a more thorough cleaning, a fine silken or cambric handkerchief should be used, moistened with alcohol, avoiding any hard or unnecessary rubbing. Never, under any circumstances, use the fingers to remove dust or dirt, since their action is highly injurious. We have known fine lenses to have been ruined by this careless method of cleaning (?). Some optical glass will become clouded when allowed to stay in a damp and warm place for any length of time. This is effectually removed by alcohol. It is due to the alkali of the glass working out and crystallizing on the surface. Some particular makes of glass are more prone to this defect than others, but it is seldom met with in high class instruments. Where the lenses themselves are loose in their cells or settings, great care must be taken when removing them for cleaning to replace them in exactly the same position, otherwise their working is greatly impaired if not altogether prevented. Lenses should not be exposed to strong sunlight, for the reason that the Canada balsam used to cement the component parts of

the lens becomes yellowed by a continued exposure to a strong light, thus materially slowing the lens' action. To conclude, keep your lenses well protected from injury, dust, and dirt, and polish or rub them as little as possible, depending on the soft brush for the removal of dust.—*The Connecticut Guardsman*.

The Mezzotype Process.—The first number of the *Engraver and Printer* contains an appreciative article on the mezzotype method of reproducing drawings, photographs, etc., for the press, and illustrates the article with excellent cuts by way of enforcement. We are glad to see a process so well adapted to artistic reproduction taken up in this country where it has been little practiced, the less pleasing "half-tone" process having seemingly monopolized the attention of our investigators. But why call it "mezzotype"? The ground is not produced by the "berceau" or cradle, as in the now disused "mezzotype" method on steel or copper, but by means of resin as in the older "aquatint" method. In fact the new "mezzotype" process is but a reversal of the method employed in making a photogravure block on copper, a negative instead of a positive being used to print from. Both historical and technical accuracy would seem to demand that the new method be called "aquatint" rather than "mezzotype."

A Simple Transfer Process for Positives.—William E. Woodbury, in the *Photographic Art Journal*, describes a simple transfer process, which consists in coating fine gummed paper with a collodio-citro-chloride emulsion. After printing the print is trimmed to size and squeegeed into close contact with the object to which it is to be transferred, the latter having first received a coating of a ten per cent. gelatine solution. A short immersion in water dissolves the gum and the print is then toned and fixed as usual. If preferred, the toning and fixing can be done before transferring. The process would seem to be useful for making slides by contact as well as for a variety of decorative purposes.

Naturalistic Photography Again.—Despite Dr. Emerson's recantation, naturalistic photography seems to be very much alive in England. The *Photographic Art Journal* says of it: "It is a nursling that has got beyond Dr. Emerson's control. Its death lies not within his power," and G. A. Davison, writing to the *Photographic News*, repudiates Dr. Emerson's claims to be the leader of the movement. The language of the combatants is calculated to make the judicious grieve.

Photographing in Paris.—Mr. R. E. M. Bain, of St. Louis, has sent us a print from one of the eighty negatives he made on a recent visit abroad, which is an excellent example of the careful work he does. He had no difficulty in photographing wherever he desired except in Paris, where he was advised that a permit must be obtained, and it required several weeks to get it. He borrowed another's permit and had no further trouble. The

weather at the time was quite cold. He secured a number of negatives of steamer life which are said to be very fine. Mr. Bain has made some valuable inventions which are in use by dry plate establishments.

Danger Attending the Transportation of Flash Powder.—We are advised by Mr. W. H. Jackson, the Colorado landscape photographer, that he lately met with a mishap which should warn all photographers to carefully look out how flash powder is handled. We quote the story as follows: "In a trunk packed with a large hand camera, several cases of plate holders, and a large case of valuable lenses was also a half pound or so of *flash powder* of different makes in tin cans. In transferring baggage at an early hour in the morning from one train to another there was a terrific explosion, and one baggage man was seriously injured. It was reported that nothing was saved, but I expect that the report is untrue." The only safe way of transporting flash powder is to have each box separated by divisions in larger box, these to be in turn filled with sawdust, precisely the same as toy torpedoes are handled. Little reliance can be placed in the statement that they will not explode when hammered on an anvil, particularly after Mr. Jackson's unpleasant experience.

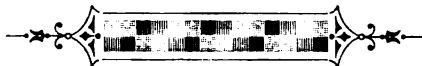
A Film Vest Camera.—The Vest Camera with round disk plates is well known. A correspondent asks, if it is not possible to be improved so that a roll holder, with an endless film, can be placed behind the lens, and a device arranged for suddenly pushing out the lens into position when desired. We should say it was a most desirable improvement, and one very easily brought about, now that the manufacturers of rollable films have been so successful in perfecting them. It would be a very light machine, easily carried, very compact, and entirely concealed. We commend the suggestion to our manufacturers, and hope to see it brought about. There are many times, so our correspondent says, when a separate permit is required to photograph each of a series of buildings, and all packages must be left with a custodian before entering, but if a practical concealed camera was on the person, no one would be the wiser, and interesting photographs could be made.

Photography in Colors.—A cablegram from Paris, lately published in the daily papers announced that "photography in colors" had again been successfully done by Professor Lippman of Sorbonne. He had one side of a thin box closed by a sensitive gelatine bromide plate, the film side being in, and filled the box with mercury so that it came in contact with the entire sensitive film; then the rays of the solar spectrum were passed through the photographic lens and impinging on the glass side of the sensitive plate in the back part of the camera, passed through the sensitive film and were reflected back by the mercury. This appears to set up an interference of rays on the plate, and when it was developed and fixed, by reflected light only on the film, traces of the delicate color could be seen. Mr. Fred E. Ives, who has made a study of composite Helichrome photographs, informs us

that Mr. Leon Vidal, of Paris, has carefully examined Professor Lippman's plate, and were it not that he was told that the spectrum was on the plate he never would have known it. It was not in the least visible by transmitted light. By twisting and turning the plate in different positions, and looking at it by reflected light, traces of the color could be noticed. The process is a very interesting experiment, but so far appears to be of no practical utility.

The Fourth Annual Spring Exhibition.—We have received copies of the prospectus and rules of this exhibition for American exhibitors, which is substantially like the foreign edition, as it appeared in the December number of the magazine, except that the names of the judges selected by the Committee of Arrangement appear. They are well-known men and their names give assurance that whoever the winners of the medals may be, they will win by fair and impartial judging. The judges are Mr. Thomas Moran, Mr. Will H. Low, and Mr. Edward Bierstadt.

It should be mentioned that the exhibition will be held under the auspices of the Society of Amateur Photographers at the Fifth Avenue Art Galleries, 364 and 366 Fifth Avenue, adjoining the A. T. Stewart mansion, between May 25th and June 6th, and exhibits must be sent to the galleries before May 11th. The blank entry forms and frame labels are now printed and ready for delivery; all inquiries should be addressed to Mr. F. C. Beach, Chairman of the Committee of Arrangements, 113 West 38 Street, New York. All photographers are invited to send exhibits. As the gallery is quite large and well lighted, ample room will be provided to easily see the photographs. This year a small exhibit of strictly new apparatus is to be included, and a competitive test of optical lanterns is provided for. Amateurs in Boston, and vicinity, may obtain information and entry forms from Mr. Edward F. Wilder, Secretary of the Boston Camera Club, at 50 Bromfield Street, and in Philadelphia, Mr. Robert S. Redfield, Secretary of the Photographic Society of Philadelphia, 1601 Callowhill Street, should be addressed. A catalogue, partially illustrated, is to be issued, which will be a souvenir of the exhibition. A number of foreign exhibits are promised. No doubt all that is the latest and best in photography will be displayed, and an opportunity provided for a comparison of the several new printing processes. The co-operation of all photographers is desired that this, the second joint exhibition held by the society, may exceed in beauty, variety, and scientific interest any heretofore given.



RECENT EXHIBITIONS.

The Boston Camera Club held another informal exhibition of prints at its rooms during the month of February, which had several excellent features. We are sorry that the committee of arrangements, composed of Messrs. Eaton, Lee, and Field, found no other way of awarding prizes than by asking each member to deposit a vote for the picture that pleased him most, which recalls the pleasant practice of our school-days, when we used to vote for the most popular fellow in the school without regard to his intellectual merit. But in this instance the really best picture, in our opinion, proved to be the prize winner, yet this was chiefly due to the fact that the "print" was in the form of a most beautiful window transparency, which completely overshadowed the silver print of the same subject hanging not far away, for which two votes had been cast, against four votes, the highest number, for the glass picture. The author, Mr. D. W. Lewis, in "arranging" his subject, "The Neponset River at Hyde Park in Winter," showed an intelligent regard for the rules of composition and technical perfection, and in these respects he set a good example to his fellow-members. Mr. Lewis also had ten $6\frac{1}{2} \times 8\frac{1}{2}$ silver prints, the most artistic of which were the winter scene alluded to, a summer view of the Neponset River, and a magnificent oak in winter costume. Mr. E. F. Dressel, who has shown nothing heretofore, contributed three prints marked by true poetic and artistic feeling, a rocky shore view with a lonely poplar tree being a positive gem. The two 8×10 landscapes, by Mr. H. C. Dunham, were quite picturesque and well executed. Half a dozen portraits of an Italian boy, a favorite model of Mr. John C. Lee, were admirable, but the one marked No. 30 excelled by its superb relief quality, which caused the figure to stand out from the background quite vividly. Mr. Lee doubtless has a good lens and knows how to use it. A view of Marion, Mass., by W. G. Preston, was marked by a superb mass of clouds, producing a most striking effect. Mr. G. D. Milne sent four $6\frac{1}{2} \times 8\frac{1}{2}$ views of land and water capes, which proved him a master of every known technical detail. The two portraits of a superb Irish setter, by Mr. J. R. Heard, were pleasing to look at, and were marked by a rare, soft, studio effect, difficult to obtain out-of-doors. Mr. E. R. Andrews showed twenty $6\frac{1}{2} \times 8\frac{1}{2}$ miscellaneous pictures, the gem of which was a boy in the woods holding back two huge mastiffs, representing a difficult photographic task most successfully carried out. But in point of difficulty, "The Diver," by E. R. Noyes, capped the climax; indeed, it was one of the most admirable things of the kind we have ever seen, the position of the plunging body being extremely curious, and the figure cut as sharp as a razor. In his silver prints and platinotypes of the same subjects, Mr. W. F. Pope demonstrated uniform excellences regarding tone and detail.

Mr. G. Morgan comes out as an industrious worker under the sky-light, contributing seven fair-sized portraits, but of uneven merit. In No. 22, a large head of a girl, he evidently strained the capacity of his lens, for the features are violently distorted. No. 18, a bright and pretty boy seated in a chair, was, however, a splendid effort, and showed Mr. Morgan's ability in the most favorable light. No. 17, a handsome girl associated with a wide-awake pug dog, and which might appropriately have been termed "Beauty and the Beast," was well posed and artistically lighted, but the animal being the most conspicuous object in the picture by reason of its superior workmanship, left us in doubt as to the real motion of the composition. A little more study, and Mr. Morgan will produce work that will reflect credit on the club. The most interesting exhibit of its kind in this room was by Mr. C. Storer. His six hot-house views of orchards were indeed superb, and may safely be regarded as the high water-mark of complete technical perfection. Mr. J. H. Thurston's ten 11×14 architectural prints showed excellent lens work. Mr. George H. Eaton's industry and ability was proved by an extensive collection of large portrait work. Having repeatedly shown his skill in using portrait lenses of every size, he now contents himself with pleasing effects attained at the expense of careful focusing. Mr. Wilfred A. French sent a dozen cabinet portraits of superior merit in artistic and technical excellence. Other contributions which deserve special mention were those of Messrs. E. F. Wilder, C. Chenery, and C. H. Currier, the last named gentleman finding it impossible to produce a picture without merit.

The second annual exhibition of the *Mystic Camera Club* was held at the Town Hall, Medford, Mass., on February 23-24-25, 1891, and was largely attended. The opening night was for members and friends. An informal reception was given followed by a lantern exhibition illustrating the White Mountains. The exhibit, comprising some eight hundred pictures, was very creditable and showed marked improvement and increased interest by the club members, numbering at present about forty members. The work of Messrs. Huff, Stone, Wheeler, Upham, and Treadwell was particularly noticeable, the latter gentleman showing an exhibit, the result entirely of his own efforts, including silvering paper, toning, mounting, etc. An active campaign has been planned for the coming summer, and with increased interest, new members, etc., the club will place itself in the front rank of amateur societies. The following gentlemen were elected officers for 1891: President, Joseph H. Wheeler; Vice-President, Arthur F. Boardman; Secretary, Will C. Eddy; Treasurer, John F. Wade.

The fourth public exhibition of the *Camera Club of Hartford* was held in the club rooms, February 2d to 10th inclusive. Looking at it from all points, the exhibition was a decided success. The interest and enthusiasm of the members was remarkably general, and the number and quality of the exhibits showed much painstaking work on the part of the members. The total entries from club members were five hundred and twenty-three, mostly silver prints and platinotypes, with a few aristos and bromides. The increase in the number of platinum prints over our last exhibition was very marked, showing that this process is steadily growing in favor. Besides the members' pictures there were exhibits from the photo section of the New Britain Scientific Society, the Springfield Camera Club, the Mystic Camera Club, and from Mr. Frederick H. Chapin of Hartford, Charles R. Pancoast of Waterbury, and Miss Susan C. Gower of New Haven. The number of visitors varied each day according to the weather, but the total attendance was over two thousand. The judges were Mr. C. R. Pancoast, of Waterbury, Mr. Frederick Weasel of New Britain, and Mr. John Leshure, of Springfield, and they awarded the diplomas as follows: Landscapes, Robert A. Wadsworth, with special mention of Dr. G. L. Parmele's pictures, Nos. 261 and 263; Marines, Edward H. Crowell; Architecture, Chas. R. Nason; Interiors, Edward H. Crowell; Animals, Wm. H. A. Fenton; Instantaneous Views, Chas. A. Lovell; Portraits, Arthur R. Thompson; Composition Pictures, Robert A. Wadsworth; Flash-Light Pictures, Frank A. Thompson; Transparencies, Chas. A. Lovell; Mixed Class—(a) Samuel Ferguson; (b) Howard W. Benjamin; Best General Exhibit, Arthur A. Thompson. The annual meeting of the club was held February 10, 1891. The officers elected for the ensuing year were: Dr. George L. Parmele, President; Charles R. Nason, Secretary; Edward H. Crowell, Corresponding Secretary; Fred D. Berry, Treasurer; Albert H. Pitkin, Elmer M. White, and Orville H. Ham, members of Executive Committee. The reports of the Secretary and Treasurer showed the club to be in a very flourishing condition. The present membership is ninety-four active and three honorary members, and it is steadily increasing.

Manhattan Chapter, Agassiz Association Photographic Section.—The first exhibition of the Section was held Wednesday, Thursday, and Friday evenings, March 4th, 5th, and 6th, and was a success in every sense of the word. About two hundred and seventy-five prints were exhibited, representing the work of seven members of the Section. Diplomas were awarded to Mr. H. Bucher, Jr., for the best landscape, one of a series of views, entitled "College Point Suburbs"; to Mr. H. T. Rowley for the second best landscape, "A Shady Path"; to Mr. F. Albers for the best portrait, entitled "Sorting Cigars"; to Mr. W. T. Demarest for the best group, "A Study in Posing," and to Mr. H. T. Rowley for the best exhibit as a whole. The judges were Messrs. L. W. Seavey, A. T. Schaffier, and E. W. Newcomb. Mr. Rowley exhibited twenty-three prints, notable among which were seven Central Park views: "The Terrace," "Harlem Mere," "Boat House," "Bridge on Pond," "Dairy," "Old Powder House," and "A Quiet Nook." He also exhibited an interesting picture of the "Old Church at Sleepy Hollow," familiar to all readers of Washington Irving's legend. Mr. Albers had twenty-five prints on exhibition, the best being the prize portrait. Views of "Fort Columbus, Governor's Island," and "An Ancient Homestead" were also excellent. One of the most pleasing exhibits was that of Mr. Bucher, thirty-six

Swiss views being especially interesting. "The Jungfrau," "Alpine Road Axenstrasse," "Devil's Bridge," "Swiss Chalet," and "The Falls of the Rhine," were most admired. Mr. Bucher also exhibited seven "Studies in Posing," flash-light pictures of a young lady in Swiss costume, and seven views of "College Point Suburbs," the latter being unquestionably the best views in his exhibit. Mr. Stahl's exhibit consisted of eighteen miscellaneous pictures, those of most merit being views of the colossal "Elephant" and the "Iron Pier" at Coney Island. Among the sixty-six prints exhibited by Mr. Miller was an excellent series of Central Park views, notable among which were "The Music Pavillion," "Over the Pond," "Panel, Terrace Stairs," "The Mall," "Entrance to the Cave," "The Pool," and "Archway Under the Drive." Several views in Bronx Park by the same gentleman were also interesting, as was a group entitled "Carpenters," showing three children with carpenter's tools, and evidently highly delighted at the prospect of having their "picture took." Most of the forty-nine prints exhibited by Mr. Putnam were from negatives made in a hand camera, those deserving special mention being "On the Lake," "Hay Rake," "Ox Team," and "Sawing Wood." An excellent portrait of a gentleman had a place in Mr. Putnam's exhibit, and many visitors thought it was equally as good as the one that took the diploma in that class. Mr. Demarest exhibited forty-six prints, those most enjoyed by visitors being "Halma," a flash-light group, "A Shady Porch," "Artist's Paradise—The Bronx," "Dam on the Bronx," "Cranstons," "Barnyard," "Autumn," "The Rapids," and "A Stony Boundary." Mr. Demarest also exhibited a series of lantern slides from hand-camera negatives. So much interest was taken in the exhibition that there is scarcely any doubt but that "annual" exhibitions will hereafter be part of the policy of the Section.

ENGLISH NOTES.

BY THOMAS BOLAS.

Printing from Hard Negatives.—In a leading article the *British Journal of Photography* refers to the plan of coating the back of the negative with a sensitive preparation, and exposing through the negative film for a sufficient time to produce a slight shading at the back of the most transparent portions of the negative. This kind of method is one very useful to those who undertake collotype printing from commercial negatives, a hard negative being especially objectionable in the case of collotype work. As a sensitive material the *British Journal* recommends collodio chloride, and there is given the formula of Dr. Just, but I suppose that in the United States the collodio chloride can be obtained ready made, or at any rate working formulas will be found in the larger text-books. In toning down the over-hardness of a negative by the process in question the first thing is to carefully clean the back of the plate, and it is next sponged over with very dilute albumen—the white of one egg to a pint of water—and when quite dry it is coated with the collodio chloride. When once more dry it is placed collodio-chloride side downwards, and light is allowed to shine for a sufficient time through the negative film upon the collodio chloride. The faint and ill defined image on the collodio chloride is now fixed and washed by means of sponging, so as not to interfere with the negative film. It is not absolutely necessary to make the automatic shading, as one may term the collodio chloride mark, on the same plate as the negative, but a second plate may be used; register between the two plates being secured by one edge of each plate to coincide and one point of each to coincide in the case of an edge at right angles to the first. This register is easily secured by pushing both plates up against three stops—say straight nails driven partly into a board—two of the stops bearing against one long edge of the plates and the other stop bearing against one of the shorter edges. The use of the separate plate has the advantage, that fixing and washing can be more easily performed, and moreover the negative is still available in its original condition; moreover it is easy to make several shades of varying depth, if there is need to do so. An analogous method of intensifying by shading at the back is occasionally used, as in this case a process must be employed which gives "like

from like," such as a negative from a negative, and in most cases the dusting-on process of Obernetter is most suitable for this kind of temporary intensifying of negatives. Such a mixture as the following is made:

Dextrine,	4 grains.
Sugar,	5 grains.
Ammonium Bichromate,	2 to 3 grains.
Water,	100 grains.
Glycerine, from 0 to 8 drops (none in damp weather and the maximum of 8 drops in very dry weather).	

The back of the negative having been carefully cleaned, is flooded with the above preparation and after the excess has been drained off, the plate is dried in a horizontal position, slight warmth being employed in drying. The negative being now laid, sensitive side downwards, on a black surface, is exposed to light for a short time. It is now laid, negative film down on a clean sheet of paper, and finely powdered black lead is worked upon it with a powder puff or a long-haired soft brush. As the least exposed parts absorb moisture from the atmosphere the black lead adheres, so giving the required shading; and by performing this kind of mechanical development in a more or less dry place, the results can be controlled to a remarkable extent. Of course the shade or mask can, as in the previous case, be made on a separate glass, if preferred.

Dr. Emerson and Naturalism.—A renewed interest in this subject has resulted from the issue of a pamphlet by Dr. Emerson, in which he intimates that he has come to the conclusion that, at present, one cannot hope for an absolutely just proportioning of tones in a photograph, and that the capability of photography as an exponent of fine art is more limited than he formerly believed. In other words, Dr. Emerson renounces his views as to the possibility of completely realizing pictorial naturalism by photography; and three of his opponents, who tend rather to see the surface of things than the inside, seem in high delight, as they imagine Dr. Emerson to have renounced the views which brought him in opposition to them.

Professor Minchin on Photo-Electricity.—A recent research by Professor Minchin is interesting, as substantially confirming the early researches of Becquerel and Grove, and although the work of our present author hardly compares for completeness with that of Becquerel, done over thirty years ago, some details are of special interest. One of Mr. Minchin's photo-electric cells consists of two plates of tin—one slightly corroded—immersed in pure methyl alcohol, and another is made with conducting plates of aluminium, one being coated with selenium immersed in acetone. The former cell will give a potential of something like half a volt in daylight, and the latter about two-thirds of a volt. With a battery of twelve cells the light of a taper will produce such a current as will ring an electric bell, and by the use of a suitable relay any required force can be brought into play on the initiative of a feeble beam of light. Becquerel's most important results obtained in 1859 may be summarized as follows. Plates of platinum, gold or other metals immersed in liquid conductors, and connected by wires with a galvanometer, show currents when light shines on one of them. Previous polarization by a battery of the plates often increases the results very much, as also does coating these plates with sensitive preparations such as chloride bromide or iodide of silver. Professor Minchin's results may not only prove interesting in themselves, but will perhaps be of more importance in calling more general attention to results obtained by the earlier workers.



CORRESPONDENCE.

THE CAMERIST.

Editor of The Beacon:

DEAR SIR,—In a notice of Wilson's *Mosaics* for 1891, published in the January number of your magazine, you speak of an article written by myself and take exception to my use of the word "camerist." As I generally endeavor to be guided by reasons in what I say and do, I will try to set down in order those which govern me in this case.

The word is not original with myself, I wish it might have been, and there being no Patent Office for newly-invented words, I have ventured to claim part ownership in this one. It is, in the first place, shorter than the word photographer, which I suppose you would prefer and my only objection to it is the sibilant "s" which mars so many English words. It is also, more euphonious than photographer or photographist, and I constantly notice people hesitate about accenting the penultimate or antepenultimate syllable in those words. While not in the dictionaries of Worcester or Webster, "camerist" should not be excluded because of its youth, and a word is not, necessarily, valuable because of age or what is called established usage. Even so generally accepted a word as "scientist" is still outside the dictionary doors. If a word can be proved to have a reasonable excuse for being, it should be allowed a chance for its life.

You are kind enough not only to give me a free field to discuss this matter but you also put weapons in my hands which I cannot refrain from using. You say the word camerist "is not needed and is not a nice addition to the language." Any word is needed which leads to condensation of space or thought in an article expected to be read in all the stress of our busy life of to-day in this country. We are making a language as well as a history. Camerist is, of course, derived from camera and it is not unusual, I believe, to change the final vowel of a word denoting an occupation when applying that word to those who follow such occupation. In the case of final consonants, the termination can be added directly or after doubling such consonant. The English language has by no means reached perfection, it is and will be subject to changes for an indefinite period of time. Many words used by Chaucer, Shakespeare, or in more recent times are not now understood. In all languages allied to the Latin the tendency is towards conciseness, as is shown in the French, Spanish and Italian languages, while the Germans add words together until they have, as Mark Twain says, a perspective. You plant a tree on foreign soil and it will take on certain new characteristics. So will a language, and I was told in Russia that Americans, even when unacquainted with Russian and speaking only English, could be more readily understood than Englishmen under similar circumstances.

In using the word "nice" in your criticism, may I ask what idea you intended to convey? "Nice" is given a number of meanings in the dictionaries but the only one I can imagine your selecting is classed as a colloquialism. It cannot, surely, be intended that in saying camerist is not a nice addition to the language you considered it was not "exact, scrupulous, refined, obvious, trivial," or "minutely elegant," which meanings are given in Worcester and Webster. Am I right in supposing you mean to say the word is not "pleasing" or that it cannot be classed, in your judgment, as "having good qualities?" Archdeacon Hare is very severe in his condemnation of the ordinary use of the word "nice." He says, among other things, that men "from poverty of thought wrap up everything indiscriminately in this characterless domino."

Americans have a gift for accomplishing more in a given time than any other nation. This is made possible by their willingness to receive new ideas without waiting until they are overgrown by the moss of tradition before accepting them. Conservatism is a useful quality but civilization would retrograde very quickly if the element of receptivity was eliminated from the human mind. I claim that if camerist is not "pleasing" in your eyes, yet it is "exact" and that it does have "good qualities." To my mind it seems to signify something more than the word photographer and more clearly conveys the idea of a lover of camera work. The word "artist" has been so much abused as to lose much of its special distinction and the word photographer takes one's thoughts back

to the days of cumbersome paraphernalia, long exposures, and stiff poses. The word is as cumbersome as the paraphernalia. While not caring to run to the other extreme and adopt every new fashion of camera or speech, I do prefer both compact cameras and words, if they do the work desired. The human mind, like the human body, should be allowed to suit its clothing to the needs of its growth. I make the claim, therefore, that camerist is as fitting a word as has ever been adopted into the English language and rest my claim on its being short, euphonious, exact, allowing repetition of an idea without tautology as regards a word and as being, in short, more convenient than the word now in general use, which need not and probably will not be relegated to obscurity.

I do not know that my reasons will prove convincing to you but by them I am willing to stand or fall. To desire purification of the language is a worthy aim and, notwithstanding your condemnation I cannot but feel that, in fact, we are working on the same lines and have the same end in view.

Yours Truly, CATHERINE WEED BARNES.

THE CURTAIN SHUTTER.

To the Editors of the American Amateur Photographer:

I have read with cursory interest Mr. Blake's article in your February number on the focal-plane shutter. The principal has attracted my attention for years, and I have often advocated it as giving much more light, with shorter exposure on any given point of the plate than any shutter working between the lenses. At the same time, I have pointed out that the attempt to compute its velocity by a bright falling point is open to a considerable error. If the shutter moves in the same direction that the focused luminous point appears to move across the plate, it is clear that the point is in the field of the slot appreciably longer than the background which is at rest. Conversely, if the shutter and the luminous point move in opposite directions, it is equally clear that the exposure of the moving object is relatively shorter.

To illustrate, if the shutter could be so adjusted as to move across the plate in the same direction as the falling ball and exactly in unison with it, it would keep the ball in the field of the slot all the way across the plate, and the length of the line traced would bear no computable relation to the speed with which the shutter traverses. On the other hand, if the shutter and the ball were to move with exactly the same speed, but in opposite directions, a moment's reflection will show that the moving point has relatively just half the time of exposure, within the limits of the slot, of a point on the fixed background. If the shutter and the falling object move vertically, the computed time of exposure will vary accordingly as they move in the same direction, or oppositely. In both cases, the calculated time is that during which the focused image of the moving point remains within the limits of the moving slot. The shutter should move horizontally in order to give the true rate of its absolute motion computing from the speed of a falling ball.

It would be an interesting experiment to mount the shutter to move vertically, and photograph a perpendicular white line moving rapidly in a horizontal direction across a black background. In theory, the line should be out of the perpendicular, and the difference between the top and bottom points of the white line, joined to its known rate of motion, would give exact bases for calculating just how long it takes the shutter-slot to traverse the width of the plate.

Mr. Blake has constructed an excellent shutter, but his calculations only hold strictly true of a shutter working between the glasses and opening from the center as in the Bauch & Lomb's Iris Shutter.

Any form of drop shutter introduces an error, accordingly as the aperture moves with the falling ball, or against it. I discovered this when I photographed a brick dropping into a pail of water, using a drop shutter before the front lens on the hood. The shutter gave much better and apparently quicker results when reversed, so as to drop up, Irish fashion.

I would suggest that Mr. Blake test his shutter on a revolving wheel turning on a fixed axle having reflecting buttons around the periphery, and then note how much sharper they will appear on one side than on the other.

Yours,

ALVEY A. ADER.

Department of State, Washington, D. C., February 19, 1891.

MR. HETHERINGTON'S NEW HAND CAMERA.

To the Editors of the American Amateur Photographer :

It has been so long since the appearance, in the December, 1889, issue of the **AMATEUR PHOTOGRAPHER**, of the description of my patent magazine hand camera, that you have, perhaps, forgotten all about it. The fact is, that owing to the press of other business, I have had no time to give to the matter of having these cameras manufactured for the market. Since an experience that I had in attempting to have a lot of twenty-five made to supply a local demand, I have resolved that I should not attempt to put them upon the market until I could have them made under my own supervision.

That time has at last arrived, and I have just finished fitting up a factory with tools and appliances, designed especially for turning out these cameras in first-class manner. It is my endeavor that they shall be the most accurately constructed instrument in existence, and that they may be all that the expert amateur may desire. Being an amateur myself, I think I know what other amateurs will consider excellences in a detective camera. The magazine is still, of course, the principal feature of the new instrument, and is entirely novel, being different from any other. This is, I believe, the only magazine in which the movement of the plate is positively controlled at all times.

There are no grooves in which the plate is expected to slide of its own volition, and no springs, every action is positive, and I think all will agree with me that it is the simplest camera of all.

Since the first description of the camera was published in your journal of December, 1889, several improvements have been added, including the addition of an extra view-finder, an improved focusing device, and a time arrangement that is the essence of simplicity.

Associated with me in the manufacture of the new camera, is Mr. Thos. E. Hibben of this city, a well-known amateur, who has few equals in the production of first-class detective camera work and lantern slides.

We will send you later on a description of our camera manufacturing plant. A first lot of cameras is now under way; these are to fill orders received in the past. In sixty days we expect to have the new box in the dealer's hands, and feel assured that our camera will be a favorite. We do not propose to enter this camera into competition with cheaper instruments; our object is to produce something that shall be gilt-edged. We expect, however, to be able to sell it at a price that shall not be out of the reach of those who have grown tired of their old style affairs, and are ready for the best.

Yours,

F. A. HETHERINGTON.

Indianapolis, Ind., February 17, 1891, 19 to 27 West South Street, Indianapolis.

AMATEURS OF DIFFERENT COUNTRIES.—FOREIGN PHOTOGRAPHIC CLUBS.—HAND CAMERAS.

To the Editors of the American Amateur Photographer :

To a practical American bent on traveling for comfort and rest, a foreign tour is much more of an undertaking than is ordinarily imagined, especially when the camera is brought along as an adjunct, so that between sight-seeing and picture-taking, the supposed rest is in reality reduced to nothing. I will give you in a fragmentary way the impressions I observed of the country I traveled through and its inhabitants, particularly in regard to those interested in photography.

During the month of September I made a four weeks' trip through Switzerland and the Tyrol. It was a grand success from a tourist point of view; not a single rainy day. I saw everything that could be seen in that short space of time, sailed over all the Swiss lakes, climbed mountains (one of 10,000 feet), inspected the glaciers, traveled in all directions by rail, by carriage, on horseback, and on foot, as occasion demanded. Even then much was left unseen, though stops were seldom made more than one night in a place.

Two months more would be required to do Switzerland thoroughly, yet Cook's tourists come back and report that they have seen Switzerland in a week. Truly Cook must be a wonderful man. I was too busy sight-seeing to take many photographs with my hand

camera, but secured a hundred negatives worth keeping, all on the American Phoenix Plates.

I saw a great many amateurs, mostly Americans; next in number, English; then French; and lastly, Germans. The Kodak was the instrument used by the majority of the Americans, very few of whom were willing or able to develop their exposures.

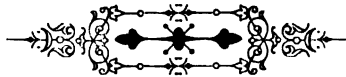
The English carry hand cameras, or the lighter kind of landscape camera, and they both "*press the button and do the rest,*" yet they are rather exclusive while at work, appear to be afraid some one might copy any hidden idea or wrinkle of theirs. The Frenchman operates very quickly, takes in his field without much deliberation, sets up his tripod, talks all the time, exposes quickly, and is off again in great haste. The German works very slow, wants to get all the fun out of it, without using many plates. He differs very much from his English and American brethren in his mode of working and in the quality of work produced. With some exceptions he buys an outfit and starts out with the determination to combine business with pleasure; he expects to make enough out of it to get his own expenses back and a little more. This sentiment prevents the amateur clubs and societies in Germany from being permanent and successful. To use a certain gentleman's expression: "The German amateur will not part with ten marks to join a society unless he is sure of getting back twenty."

Searching in many prominent cities and towns for amateur associations, revealed the fact that they had existed for a brief period, and then expired. The stock dealers appear to be the head and front of most organizations. The trouble seems to be that it is much more difficult, than in America, to find men who will work without pay among the amateurs, hence the stock dealers' opportunity. The only German amateur photographic society worth mentioning is in Munich, numbering forty members. It once declined and revived again. It meets in a café once a week, in a large meeting room. The members smoke, drink beer, talk photography, and have a good time generally. The society is without a home, has no dark-room, lantern, or library, like the American clubs. Thus you see it is a very primitive organization.

In Frankfort I had a pleasant interview with Dr. Krugener, noted as being quite an extensive manufacturer of photographic apparatus, especially of the hand camera sort. He examined my Scovill 4x5 very minutely, and called his foreman in also to inspect it. He acknowledged our American superiority in many things as to the construction of apparatus. In Germany, he claimed, everything must be cheap or the amateur will not purchase. When I informed him that my instrument with the plate-holders cost three hundred marks (\$75), he clapped his hands together and exclaimed: "There is not a man in all Germany who would pay that much for a hand camera." He informed me that German amateurs in general know next to nothing about making lantern slides; those used in Germany were brought in from France or England. No such thing as the oxy-hydrogen compressed gases appears to be obtainable in Germany. Theatre stages are lighted by the electric arc light. This seems strange to an American accustomed to show his work in the lantern. Matters may be different in Austria where more activity in photography is said to prevail.

C. S.

Dresden, Germany, January, 1891.



SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Postal Photograph Club.—The October and January albums of this Club, with their respective note-books, have just been received. From the latter we see that Mr. Hansmann has won the first prize in the October album, both for artistic and technical merit, with his fine platinum prints; and Miss E. S. Needles the second prize for artistic merit on her much-admired bromide enlargement, "The Bridge of Sighs," Venice, made from a snap shot with a detective camera, taken in the rain.

In the January album Mr. Hansmann stands first again, in our opinion. His "Davy Burns' Cottage" is a splendid study of sunshine and shadow. Davy Burns, by the by, he tells us, was one of the principal owners of the land on which Washington City now stands.

Mr. H. H. Williams (late Vice-President of the Birkenhead Photographic Society, England,) a new member just added to the club, gives us also a very artistic study in No. 67, and Mr. Graves some more of his fine technical work in Nos. 2 and 3.

Miss Clarkson sends the club a pretty New-Year greeting in a bromide print of an old horseshoe, entwined with four-leaf clovers, and the words "To Our Club" printed on in old English. She also gives us quite a "Robinsonian bit," as one of the members express it, in her study of "Darby and Joan."

From Miss E. S. Needles we have, this time, a very fine photo of "The Washington Monument," Baltimore, and Miss Gillender shows us good interior work in her view of "A Country Parlor." Mr. W. H. Walmsley sends four fine microscopic studies, and Mr. J. M. Walmsley two more of his interesting camp scenes.

Mr. LeBreton gives us, this time, the first of a series of "Types of American Women," and if those to follow are as good as No. 1, we certainly have quite a treat in store. From Miss C. J. Needles and Mr. Davy we have some very good studies of children. The former is flash-light work. Dr. Mueller gives us a charming little study in No. 48, "Sheep Feeding," and Mr. Stanton, whom, we are very sorry to hear, has to leave the club on account of Navy duty, gives us some interesting foreign bits.

There are 72 pictures in this album, of which we have only mentioned those especially deserving of praise.

Louisville Camera Club.—At the annual meeting, held on February 12th, the following officers were elected: President, Alexander Griswold; Vice-President, Henry Terstegge; Secretary and Treasurer, R. L. Stevens.

Tarrytown Camera Club.—This new club has recently been organized in Tarrytown, New York, with nine members and the following officers: President, Thos. H. Swift; Secretary and Treasurer, F. B. Morse.

The Society of Amateur Photographers of New York.—Saturday evening, February 7th.—The first auction sale of old photographic traps, conducted under the auspices of the society, took place this evening, Mr. T. J. Burton, the secretary, acting as auctioneer. In this rôle he was quite successful, and entertained his hearers until very nearly midnight. It is reported that the sales reached nearly \$400, resulting in giving to the society nearly \$50 as its share of the proceeds. Ten per cent. of the sales was reserved as a commission. It is expected every winter an annual sale will be one of the features of the society hereafter.

Regular Monthly Meeting, Tuesday Evening, February 10th.—President James H. Stebbins, Jr., in the chair. The topic on the card for the evening was a paper descriptive of orthochromatic photography, by Mr. Alfred Steiglitz, entitled "Studies on Orthochromatic Plates Printed in Platinum." Owing to sickness Mr. Steiglitz was unable to be present to explain in detail the points mentioned in the brief paper he had prepared, which was

read by Mr. L. B. Schram, but he sent a number of views and figure studies from orthochromatic negatives printed in platinum, that were most excellent examples of what can be done in this line.

Mr. Steiglitz urged the necessity of having a good lens to begin with; he used a Steinheil and Vogle's eoside silver emulsion orthochromatic plates, without a yellow screen inserted between or in front of the lens. The plates were quite uncertain in quality, were liable to be spotty or to work unevenly. The only way to do was to make exposures on chance, and if the plate turned out poorly repeat the exposure. The process was therefore quite expensive, but if certain effects were to be obtained he considered the plates good enough to try. What was rather surprising were the long exposures given in some of the views; with the lens stopped down to f-64, the time varied in bright sunshine from two to four minutes, according to the subject and certain effects it was desired to obtain. Then according to the desired quality of negative wanted, different developers, such as pyro, hydroquinone, ferrous oxalate, and eikonogen, were employed. The prints were made on the London Platinotype Company's paper, which was preferred to any other. It was rather unfortunate Mr. Steiglitz could not have been present to explain more fully his reasons for some of the apparently long exposures. He believed in fully exposing for the shadows. Miss Catherine Weed Barnes exhibited a Newcomb and Owen special 5 x 7 hand camera, the main design of which was taken from the regular Scovill box. It was very compact, being but a trifle larger than a 4 x 5 box, was fitted with a new Jena glass Voigtlander Euryscope, in front of which was arranged a Prosch triplex shutter having time and instantaneous movements, a permanent ground glass for focusing and room for three double holders.

The President stated that he had been continuing his experiments on printing processes on paper particularly with the iron salts, and spoke of the Kalotype process as being something new, but which will be found fully described in the May, 1890, number of the *AMERICAN AMATEUR PHOTOGRAPHER*, page 190. He had some difficulty in keeping the solutions exactly neutral, which should be done if the best tones are to be obtained. The citrate of silver solution was preferred.

Mr. Roumagne reported for the Entertainment Committee that Chickering Hall had been engaged for March 7th, for an exhibition of Mr. R. H. Lawrence's collection of views in Spain and Morocco. The secretary reported that eight active and five subscribing members had been elected to the society since the last monthly meeting.

Mr. Beach reported on behalf of the May exhibition committee that the judges appointed to judge the exhibits were Thomas Moran, Will H. Low, and Edward Bierstadt. He urged members to get at work on their best pictures, that the quality of the exhibition might be high. The committee was not desirous that a great quantity of photographs be sent by any one individual, but preferred only a few of the best that could be made. A number of foreign exhibitors expected to favor the exhibition with contributions. He further reported on behalf of the Lantern Slide Committee that the new tracing paper screen was regarded as a success by all who had the pleasure of seeing an exhibition through it in January, hence it would be a fixture until something better was provided. The meeting then adjourned.

Friday Evening, February 20th.—"A Short Trip through Holland with the Camera," was the title of a most interesting talk by Prof. D. L. Elmendorf, illustrated by one hundred and twenty slides, of views just as he made them in tramping through Holland, and well repaid all who ventured out to attend that unpleasant evening. He graphically described the market places in Amsterdam; the numerous canals; the cathedrals; the peasants; their homes; the queer way the buildings have of getting out of plumb; the great dykes, some thirty feet high; the so clumsy—yet strong—fishing boats, how they float up at high tide, and at low become wholesale fish markets for the market women to patronize. Some of his interiors were remarkably good. He used a Dalmeyer lens and Cramer high grade of sensitiveness plates. Both plates and slides were developed with hydroquinone and potash. The slides which were invariably clear and good, were delicately and appropriately colored. For them Carbut plates were used exclusively. The lantern was operated by Messrs. Beach and Simpson. His views were thoroughly enjoyed by an appreciative audience, and it is with pleasant anticipations that he will favor the society

with an exhibition of a number of fine views of Switzerland scenery in a very short time.

Monday, February 23d.—Monday evening another smoking concert was given, which was thoroughly successful and greatly enjoyed; music, legerdemain, and lantern slides, and a table, supplied by Terhune with plenty of pipes and tobacco, gave sufficient entertainment to a crowd of members and invited guests to pleasantly pass away the time till 2 o'clock the next morning.

Friday Evening, February 27th.—"A Ramble in and about Columbus," by the Columbus Camera Club, was the subject of the regular monthly exhibition of lantern slides. The exhibition was arranged in the form of an illustrated lecture, and included views of all the public buildings in Columbus, of which there appear to be a large number. The slides as a whole were foggy and defective, among the best and most interesting were views of the Ohio State Capitol, at the time it was built, said to have been the largest capitol building of its kind in the United States; a pretty view of East Broad Street, lined with elms and very broad; Mr. Alfred Kelly's homestead (Mr. Kelly had been the pioneer in developing the canal system of the State); portrait of Henry Howe, LL.D., the historian (a fine looking gentleman); pictures of the famous Ohio mounds; the Olentangy river and river road, two very picturesque views; Columbus, looking north from Broad Street bridge, showing extensive factories along the river; the "Starling Medical College," a stately building of unique architecture; a very clear slide of the Hon. H. G. Thurman's residence; quite a picturesque view in the grounds of the Ohio State University, showing a spring and small lake; the great hemispherically shaped auditorium in the State Fair Grounds, big enough to hold 10,000 people and to accommodate 1000 on the stage; Gen. Grant's birthplace, showing house; views in the City Park, of the lake and barracks; on the Ohio Canal, charming glimpses of landscape; the Five Mile Lock on the canal, and a most beautiful and striking slide entitled: "Hayden Falls," said to be located in the center of the State of Ohio. This and some of the river views were the gems of the evening. There is no doubt that Columbus possesses many valuable and useful institutions. All of the buildings were massive and looked as if they would accommodate the needs of the State.

Following the Columbus views, of which there were seventy-two, were twenty slides by Mr. C. W. Canfield, formerly president of the society, from negatives made with a Waterbury hand camera, while on a brief tour to Italy. They embraced street scenes in Florence, showing how funeral processions are conducted; views in Naples; Pisa, with the peculiar dog carts in the street; the market place at Carrara; ruins in and about Rome; Place sel Signoria in Florence, showing beautiful statuary; St. Mark's Place in Venice, and an interior of the church, and the well-known "Rialto Bridge," at Venice. The views were more like random shots made with the camera than any special illustration of a particular subject. Mr. J. Henry Whitehouse exhibited a few slides of Tunis and Algiers' girls, views in Delhi and Agra, India, and a very clear slide of a blind, aged Arab beggar.

The exhibition closed with eight slides, by Mr. Ferdinand Ruppert, of views on "St. Mary's Training Ship;" a "Glimpse Aloft," showing sailors at work on a cross arm taking in sail, a very effective slide; Bedloe's Island, New York, showing the cannon; a very picturesque view of an old dam and road over it, at Glen Cove, N. Y. The cloud effect in this view was most remarkable. His concluding slide was a flash-light picture, called "Home, Sweet Home," representing a darkey family singing, very naturally grouped in a kitchen, one of the members being engaged in playing the accordion. His views very appropriately terminated an interesting exhibition.

Mr. Wm. M. Murray explained the views and did so most creditably, having spent some time in studying up facts about them. The lantern was operated by Messrs. Beach and Warrin.

The Mystic Camera Club (Medford, Mass.) held its annual meeting recently. The officers elected were: President, Joseph H. Wheeler; Vice-President, A. H. Boardman; Treasurer, J. F. Wade; Secretary, Will C. Eddy.

The Camera Club of Hartford issued a very artistic catalogue of their exhibition held in Hartford, February 2d to 7th. It was illustrated with photogravure prints. Many

expert amateurs are among the members of this club. The exhibition was highly successful, being very largely attended; some excellent work was shown. Mr. C. R. Pancoast, of the Waterbury Club, acted as one of the judges.

The Photographic Society of Philadelphia.—This old society has recently undergone a re-organization in its management by adopting the plan of having its business affairs governed by a board of directors, which is a step in the right direction. The board has appointed practical men on the standing committees which are a House Committee, Committee on Meetings, Committee on Library and Publications, Committee on Lantern Slides, and a Committee on Membership. The board is to meet on the first Thursday afternoon of each month. At the regular monthly meeting of the society, on Wednesday evening, January 14th, Mr. John G. Bullock, the president, in the chair, Mr. W. H. Rau was re-elected as the representative of the society in the American Lantern Slide Interchange. Mr. Frederick E. Ives read an abstract of a recent lecture delivered by him before the Franklin Institute, on "Heliography, or Photography in Colors." (We hope to give extracts from his paper in a later number.) Mr. Earle exhibited a rubber-type outfit for printing titles, numbers, etc., on negatives. The honor pictures chosen for 1890 were: "A Swiss Valley," by Dr. Charles Mitchell; "Mending Their Ways," by Robert S. Redfield; "Westward as Far as the Eye Can Reach," by John G. Bullock; and "Flo," by Clarence B. Moore. A lantern-slide exhibition of views in the Yellowstone Park by Mr. A. M. Spangler closed the meeting.

Photographic Section of the American Institute.—At the regular meeting held February 3d Professor E. L. Elmendorf gave an entertaining talk of a "Two Weeks' Trip Through Holland," illustrated by over a hundred lantern slides.

The American Photographic Conference.—The council of the conference held a meeting at the rooms of the Society of Amateur Photographers on February 11th, ten of the fifteen members being present. It was voted to postpone the meeting in April to the latter part of May, so that all who come to the city could see the exhibits of the fourth annual joint exhibition to be held at that time. On May 27th a banquet is to be held, and if the weather permits, a field excursion around New York harbor and the rivers is to take place on May 28th. Among the new clubs wishing to join the conference were the Schuylkill Camera Club, Richmond Camera Club, California Camera Club, Springfield (Mass.) Camera Club, Waterbury Camera Club, Daguerre Camera Club of Chicago, Columbus (Ohio) Camera Club, and the Brooklyn Society of Amateur Photographers.

The conference has been incorporated under the laws of the State of New York. The incorporators are Dr. Ely Van de Warker, T. J. Burton, Cornelius Van Brunt, Harry S. Fowler, J. W. Alexander, and F. C. Beach. The council decided that it would be advisable to publish a monthly journal to record the papers read at the conference and any other items of interest that might be brought up. It is to be distributed free to members and is to be called the *Journal of the American Photographic Conference*.

A special local committee was appointed by the president to arrange and take charge of the conference next May, consisting of Prof. Randall Spaulding of Montclair, N. J., Harry S. Fowler, Prof. Edward Weston of Newark, N. J., Cornelius Van Brunt, T. J. Burton, A. J. Thomas, J. W. Alexander of the Yonkers Camera Club, and F. C. Beach.

The Photographic Society of Philadelphia withdrew from affiliation with the conference. Mr. C. R. Pancoast, representing the Waterbury Club, was elected to fill the vacancy.

A very handsome souvenir of the first meeting of the conference held last December, illustrated by portraits of the officers, is being gotten up for distribution among members.

The Brooklyn Academy of Photography.—The New York *Herald* of February 22d contains a three-column account of this institution, giving illustrations of some of the work of members. Mr. Wallace Gould Levison was one of the originators. The academy has prospered and now numbers nearly eighty members. The present officers are: President, Frank La Manna; 1st Vice-President, William T. Wintringham; 2d Vice-President, William Arnold; Corresponding Secretary, Harry S. Fowler; Recording Secretary, Herman C. Tremper; Treasurer, Edward H. Quantin, Curator and Librarian, George S. Wheeler.

Dr. T. R. French, together with Prof. Levison and Mr. Brainard, have been successful

in photographing the vibrating vocal cords of the human throat, with a special instrument and camera designed by them.

The Brooklyn Society of Amateur Photographers.—The society has been organized for about two years, holding meetings occasionally at the houses of the members. The latter part of February a very creditable lantern-slide exhibition was given at Joppa Hall in Brooklyn. The society contemplates joining the American Lantern Slide Interchange next season. The present officers are: President, Homer Ladd; Vice-President, Clarence M. Trowbridge; Secretary, Henry P. Sewall; Treasurer, Allan Ormsbee. Several of the members make their own cameras.

The Buffalo Camera Club.—Reports from Dr. G. Hunter Bartlett, who is virtually the leader of this enterprising club, show that all its members are enthusiastic on the subject of lantern slides and lantern-slide exhibitions. Every time an entertainment is given, at which the interchange slides are shown, audiences numbering from three to four hundred invariably attend, so that it has gotten to be quite the fashionable fad for the friends of members and of the club to see the exhibitions. No better way can be provided for popularizing photography than such entertainments, and the club is bound to grow in numbers and interest in Buffalo.

The American Lantern Slide Interchange.—During the month of January, under the constitution of the Interchange, the different societies and clubs are required to elect directors for the year 1891, to represent them. The following are the new directors elected this year. Wm. H. Rau, representing the *Photographic Society of Philadelphia*; F. C. Beach, representing the *Society of Amateur Photographers of New York*; G. Hunter Bartlett, representing the *Buffalo Camera Club*; F. G. Agens, representing the *Newark Camera Club*; W. S. Bell, representing the *Pittsburg Amateur Photographer's Society*; T. B. Collier, representing the *Cincinnati Camera Club*; W. A. Morse, representing the *Chicago Lantern Slide Club*; H. B. Alexander, representing the *St. Louis Camera Club*; E. L. Woods, representing the *Pacific Coast Amateur Photographer's Association*; L. E. Bowman, representing the *New Orleans Camera Club*; Alexander Griswold, representing the *Louisville Camera Club*; Harry D. Williar, representing the *Baltimore Amateur Photographer's Society*; Charles C. Hinchman, representing the *Detroit Lantern Club*; Dr. Gaylord P. Clark, representing the *Syracuse Camera Club*. Mr. George Bullock, so long connected with the management, retires from the Interchange, expecting to be absent abroad.

St. Louis Camera Club.—This club unexpectedly suffered a severe loss in January by the abstraction from its rooms, supposed by a thief, of four pairs of lantern objectives, and the high pressure dissolver, and some of the fittings of the lantern were maliciously broken. We seldom hear of thefts of this kind. It is to be hoped that the thief will be caught.

The Hoboken Camera Club.—The annual meeting of the Hoboken (N. J.) Camera Club was held on Tuesday evening, March 3d, at which the following officers were elected for the ensuing year: President, A. J. Thomas; Vice-President, George E. Mott; Recording Secretary, George Steljes; Treasurer, C. L. A. Beckers; Corresponding Secretary, F. Childs; Custodian, Wm. Allen; House Committee, F. A. Muench and F. Trickel; Entertainment Committee, W. Sachs, A. Ruprecht, R. Beyer, C. Sudhaus. The club, having just purchased the brown-stone front building, 30 x 100, No. 380 Park Avenue, are now engaged in transforming it into the necessary shape for a photographic club, of which a future description will be given. The house-warming and first reception occurred on March 11th. On the 22d the second anniversary will be appropriately celebrated. A grand fair will be held in the month of April in the spacious hall of the club house to raise money to purchase photographic accessories, and finish the basement with a bowling alley for the social welfare of the members. The developing rooms are furnished with every-modern requisite and convenience. The club is a growing society, and the intention of the members is to make it the society of Hoboken.

Photographers' Association of America.

TWELFTH ANNUAL CONVENTION.

BUFFALO, N. Y., JULY 14TH TO 17TH INCLUSIVE.

"IROQUOIS HOTEL," BUFFALO, January 21, 1891.

EXECUTIVE SESSION.

Meeting called to order by the President. All officers present, namely:

Geo. H. Hastings, President; S. L. Stein, 1st Vice-President; W. Stuber, 2d Vice-President; G. M. Carlisle, Treasurer; and W. A. Davis, Secretary.

Address of welcome by the President. Reports of the Secretary and Treasurer were then read. President appointed Messrs. Stein, Stuber, and Davis as Auditing Committee, who reported that they had found the same correct, and the Committee were discharged.

The next Convention will be held on July 14th, 15th, 16th, and 17th, at the Buffalo Park Association, Buffalo, New York. Dr. A. H. Elliott, associate Editor *Anthony's Bulletin*, was appointed a Committee to report on the "Progress of Photography."

AWARDS FOR, AND RULES GOVERNING EXHIBITS AND SUGGESTIONS TO ALL EXHIBITORS IN THE ART DEPARTMENT.

List of awards for 1891 are as follows: The Grand Prize will be a Group in Bronze, with Marble Pedestal, "The Victor," valued at \$175, governed by the following rules and regulations:

Competitors for this award shall exhibit three plain Photographs, illustrating Tennyson's Poem "Elaine."

The size to be not less than 13 or more than 22 inches in length.

The pictures must be framed either with or without glass. The award to be made for the most meritorious collection.

A diploma will be awarded for the second best collection.

Class A.—A beautiful Marble Bust, value \$125.00, for the best exhibit of genre photographs.

Competitors for this class shall exhibit six photographs. The subjects are to be chosen by the photographer and appropriately inscribed; and size to be not less than 13 or more than 22 inches in length, and framed, with or without glass. The award to be made for the most meritorious collection.

A diploma will be awarded for the second best collection.

Class B.—One gold, one silver, and one bronze medal, for the best collection of portrait photography, size 14 x 17 inches or larger.

Class C.—One gold, one silver, and one bronze medal, for the best collection of portrait photography, size 11 x 14 inches or smaller.

Class D.—One gold medal for the best collection of landscape photographs with figures introduced.

Class E.—One silver and one bronze medal for the best collections of landscape photographs without figures.

One silver medal for the best collection of marine views.

One silver medal for the best collection of architectural views.

Class F.—One silver and one bronze medal for the six best plain enlargements, either in silver, bromide, albumen, carbon, or platinum; the size to be not less than 18 x 22 inches.

PRIZES FOR EMPLOYEES.

Class G.—One gold medal to the operator making and exhibiting the three most artistic photographs, size to be not less than 13 or more than 22 inches in length.

Class H.—One silver medal to the retoucher for the best set of six retouched negatives with prints from unretouched and retouched negatives.

Class I.—One silver medal to the printer for the most artistic printing, six prints to be exhibited.

Pictures exhibited by employees cannot be used from negatives from which employers exhibit.

Class J.—One silver medal for the best improvement in photographic appliances introduced since the last convention.

Class K.—Three prizes to be awarded for the best foreign exhibit of portrait photography, framed or unframed, delivered to the association free from all charges.

Exhibits in this class will be admitted to the United States free, by sending the same directed to W. A. Davis, Secretary of the Photographers' Association of America, Buffalo Park Association, Buffalo, N. Y., U. S. A.

A diploma will be awarded for the most tastefully arranged exhibit.

Competitors for the Grand Prize or Class A cannot enter in Classes B or C.

Competitors in all classes except Class K must be members residing in the United States or Canada.

Applications for space must be made to S. L. Stein, 310 State Street, Milwaukee, Wis., who will forward blanks for entries and also send the number under which the exhibit is to be displayed.

The exhibitor must attach this number to his exhibit.

Entries to close on Saturday, June 20, 1891.

No space to be allowed after that time for exhibits.

All exhibits must be shipped so as to reach the exhibition building on July 8th, the Wednesday preceding the opening of the Convention, and all charges *must* be prepaid.

Exhibitors' pictures are to be known to the Judges by number only. No name to be upon the pictures until after the awards are made.

The Executive Committee who will appoint the Judges, will hand in their reports on or before the afternoon of the third day, to the President.

Should any exhibitor influence in any way, directly or indirectly, the Judges during their term of office, in favor of any exhibit, it shall be the duty of the Judges to strike their exhibit or exhibits from the lists.

RULES GOVERNING THE JUDGES IN THE GRAND PRIZE.

The points to be considered are: 1st, Historic; 2d, Originality; 3d, Composition; 4th, Lighting; 5th, Technique.

Ten marks to be the highest for any one point, consequently 50 marks the most that can be given for any one picture.

The standard of this award must be 35 marks out of a possible 50.

RULES GOVERNING THE JUDGES IN CLASS A.

The points to be considered are: 1st, Originality; 2d, Composition; 3d, Lighting; 4th, Technique.

Ten marks to be the highest for any one point, consequently 40 marks the most that can be given to any one picture.

RULES GOVERNING THE JUDGES IN OTHER CLASSES.

The points to be considered are: 1st, Lighting; 2d, Posing; 3d, Chemical Effect; 4th, General Effects or Finish.

All photographs exhibited must be from negatives made since the 11th Annual Convention held at Washington, D. C., August, 1890.

All Art Exhibits must be sent to S. L. Stein, Art Department, Photographers' Association of America, Care of Buffalo Park Association, Buffalo, N. Y., all charges prepaid.

Exhibits for the stock department to be shipped in care of W. A. Davis, Secretary Photographers' Association of America, care of Buffalo Park Association, Buffalo, N. Y., and placed in position by 10 A.M., July 14th, all charges prepaid.

The art and stock department will be closed each day from 10 o'clock A.M., to 12 o'clock M., to secure a large attendance at the business meetings.

As will be seen from above notes, there has been a very liberal classification of art productions and awards for same, and it is hoped and expected that there will be a ready response, so that long before the Convention opens, a knowledge of what is to come will enable the officers to be fully prepared for all entries, that each one may be properly classified and hung.

I would request all exhibitors to send with their work screw eyes and cord, so that the committee may not be put to trouble and expense, as it is the plan to have all exhibits hung before the opening of the Convention, thereby saving noise and time, and having all members in attendance at the business sessions. It is very natural for all to postpone sending exhibits until within a few days of the opening of the Exhibition; but arrangements will be made at the railroad stations in Buffalo to hold anything sent until the proper time to send them to the hall, so that no one need feel any uncertainty about the safety or disposition of the same.

Have your box covers screwed instead of nailed; put your home address on under side of box cover for return of pictures; help your committee all you can by promptly forwarding entries and exhibits. There is enough for them to do even if these rules and suggestions are fully carried out.

The Executive Committee are very desirous of having this Convention the best ever held, and earnestly request that every one will make an extra effort to have a finer display of Artistic Photographs than has been exhibited in the past.

A true record. Attest:

W. A. DAVIS, *Secretary*.

Prizes for Road Photographs.

The League of American Wheelmen are endeavoring to secure an improvement in public roads and, as an aid in convincing authorities and in educating the public, have had two organizations and issue the following sensible call:

To stimulate the collection of photographs to be used in showing the need of improved roads in the United States, we hereby offer three prizes aggregating one hundred dollars in gold, as follows:

1. One prize of \$50 in gold for the best collection of not less than three photographs.
 2. One prize of \$30 in gold for second best collection of not less than three photographs.
 3. One prize of \$20 in gold for the third best collection of not less than three photographs.
- (a) All photographs must be accompanied by negatives unless the latter have been destroyed.
- (b) Competition will close on the first day of May, 1891, and all photographs must be submitted on or before that date.
- (c) Photographs must be confined to such subjects as most strongly illustrate the unfitness of the present public roads (especially the common "dirt" roads) to be used as public highways.

(d) To aid you by suggestion we will say that we want:

Photographs showing the common spectacle of the farmer's team and wagon, hub-deep in the muddy road;

Photographs showing rough, rutty, and muddy roads in their worst condition;

"Stuck in the mud" photographs showing the farmer or the merchant with his loaded wagon vainly trying to drive his patient team and load out of the inevitable mud hole;

Photographs showing the every-day break-down caused by rough or muddy roads or steep grades;

Photographs showing smooth, hard-surfaced roads, and (if possible) teams hauling loads over the same;

And other pictures illustrating the goodness of good roads and the badness of bad roads;

Your own opportunities and observation will suggest the proper thing in this line.

(e) Each photograph must be accompanied by a full statement of particulars, giving date, location, etc., by which the picture may be identified. (Blanks for this purpose will be supplied on application.)

(f) All photographs and negatives submitted must be marked with a fictitious name or pseudonym by which the competitor is to be known until the date of award. Each competitor must also send a sealed envelope containing his (or her) real name and address, and marked upon the outside with the fictitious name of the competitor.

(g) At least ten persons must compete in order to insure the award here offered.

(h) All photographs and negatives submitted in this competition are to remain the permanent joint property of the New York and Connecticut Divisions of the League of American Wheelmen.

(i) In deciding upon the respective merits of the work submitted, the following points will be considered:

1. The subject of the photograph and its force in illustrating the necessity for better roads;
2. Clearness and general excellence of the photographic work;
3. Location, giving preference to those views which show bad roads in important counties, suburbs of large towns, etc.;
4. Size of photograph. The question of size will be considered least and last of all.

The prizes will be awarded before May 15, 1891, by a committee to be selected by the chief consuls of State Divisions of New York and Connecticut.

All communications will be in every respect confidentially treated, and further information will be furnished on application to either of the undersigned, to whom all photographs and negatives should be sent.

ISAAC B. POTTER,
Chairman Roads Inspection Committee,
New York State Division, New York, N. Y.

CHARLES L. BURDETT,
Chairman Roads Inspection Committee,
Connecticut State Division, Hartford, Conn.

[Note.—Any photographs sent to the editors of the magazine will be duly forwarded.]



INDEX RERUM PHOTOGRAPHIC.

BY DR. JOHN H. JANEWAY, U. S. A.

[Continued from page 90.]



should the film be broken, lay the negative down, film underneath, upon a perfectly level surface, carefully placing the fractured pieces together, first applying to their edges a little thin Canada balsam or stratenal, and apply gentle pressure to the sides and top of the plate. When dry carefully scrape off all surplus cement. To print from a broken negative put the printing frame in a narrow box some two feet deep, with blackened sides, a piece of fine tissue paper being dropped upon the frame, or print under tissue paper and keep the printing frame in a swinging motion during the operation. If the negatives are broken beyond help, an untinted silver print, if at hand, can be made to reproduce a negative by contact printing on a gelatino-bromide plate, by rendering them transparent with vaseline rubbed on the back, or from a blue print by copying through a yellow screen upon a Carbutt "B" plate and developing with an old hydroquinone developer.

BROMIDE OF AMMONIUM—See Ammonium Bromide—Used as a restrainer and also to give density. Also as an ingredient for plates liable to green fog. It should never be used in connection with eikonogen.

BROMIDE OF ARSENIC—As Br = 315—Prepared by dissolving arsenic in a solution of bromine in carbon bisulphide, and evaporating. Crystals deliquescent, colorless, which melt at about 70° F., and are decomposed by water.

BROMIDE OF COPPER—Has been used to produce pictures upon in the camera and under a negative, more as curiosities than for practical purposes. They are not unlike daguerreotypes, and are just as easily injured. The time of exposure required is about five or six times as long as wet plates. Developed with pyro and alkali, and fixed with a weak solution of cyanide of potash; hyposulphite of soda also fixes, but the image breaks up. Mr. F. C. Beach recommends a solution of bromide of copper to bleach bromide prints, which see.

BROMIDE OF POTASH—K Br = 119—Prepared by dissolving bromine in caustic potash, which forms a mixture of bromide and bromate of potash. Evaporated slowly to dryness and then gently ignited to drive off the oxygen, which reduces the bromate to a bromide. Its crystals are clear, cubical, and readily soluble in water, and slightly so in alcohol. A favorite restrainer in pyro development, preventing any action upon the silver bromide which has not been affected by light, and steadying and regulating the decomposition of that which has been influenced by it.

BROMIDE OF SILVER—Ag Br = 188—Found native in small quantities in Mexico, Chili, and Brittany. May be prepared by direct combi-

nation of its elements, as in the daguerreotype process—a silver plate exposed to the vapor of bromine. In the collodion and gelatine processes silver bromide is formed by the action of nitrate of silver upon a soluble bromide. When hydrobromic acid is added to a solution of silver salts, bromide of silver is precipitated. It is a yellowish white substance which turns gray on exposure to light. This change can be retarded or altogether stopped by the presence of even a trace of nitric acid or free bromine. Insoluble in water, but soluble in alkaline hyposulphites, cyanides, sulphocyanides, and ammonia. See Silver Bromide.

BROMIDE OF SODA— $\text{Na Br} = 103$ —Prepared by neutralizing hydrobromic acid with sodium carbonate. From hot solutions it crystallizes in anhydrous cubes; if the solutions are below 90°F. , the crystals are prismatic and contain two molecules of water, $\text{Na Br} + 2\text{H}_2\text{O}$ —a fact which should be remembered. It is freely soluble in water and alcohol. Uses, restrainer and to give density.

BROMIDE OF ZINC— $\text{Zn Br}_2 = 225$ —Prepared by passing the vapor of bromine over red hot zinc. A white crystalline salt which greedily absorbs moisture, and deliquesces when exposed to the air. Used in sensitizing collodion.

BROMO-GELATINE EMULSIONS—The introduction of the dry plate gave an immense impulse to photography, and its effects still continue, urging on the thoughtful worker to paths still untrod, with a zeal worthy of great results. Numerous are the formulæ for emulsions, and therefore they can be better treated under that general head, which see.

BROMIDE PAPER—Positive and negative, etc. Paper coated with an emulsion of bromo-silver-gelatine. There are so many valuable kinds of the paper in the market that it is cheaper to buy than to prepare it for one's self. Still, under the head of emulsions will be found formulæ that can be used if so desired. The two most prominent brands of bromide paper to be had are the Eastman's and Anthony's "Reliable," and are sold in three grades—smooth surface and thin, smooth surface and thick, rough or matt surface and thick paper. The first is most suitable for small prints and mounting, the second is well adapted for book illustrations, and the third especially fitted for enlarged portraits, giving the appearance, somewhat, of a crayon drawing. This paper can be used either for contact printing or for enlargements. Negatives full of detail, vigor, and brilliancy give the best results. Development: All grades of this paper can be developed either by ferrous oxalate, pyro, hydroquinone or eiko-

nogen developers. But it is not well to use a bromide with the hydroquinone developer, as it is almost impossible to procure clear whites when it is employed. After development the prints should be placed in a clearing bath of either acetic, 1 dram; or citric acid, 1 dram; alum, 8 oz.; distilled water, 32 oz.; and there to remain two or three minutes, then washed and placed in a fixing bath (new), hypo, 1 oz.; water, 6 oz.; for from six to twelve minutes, and then washed for some hours. If stained or discolored, immerse them for a few minutes in a bath composed of sulphuric acid, 1 oz.; chrome alum, 2 oz.; water, 20 oz.; and then again wash for one-half hour. Should they be too intense, they can be reduced by treating them in a bath of saturated solution of chloride of lime, 1 dram; water, 2 oz.; and then washed. They can be toned by substituting either gold or platinum for the silver image, as follows: By gold: Immerse the prints in the following solution: Potassium iodide, 20 grains; water, 2 oz.; chloride of gold, 1 grain. They should soon turn blue at the edges, and then so all over the print. This soon passes away and the gold is rapidly deposited, giving a deep blue-black color to the shadows. By platinum: The print must be very much overprinted and then soaked in the following, until the desired tone is obtained, a sepia color: Platinum perchloride, 15 grains; distilled water, 70 oz.; hydrochloric acid, 1 oz. In all the manipulations with this paper absolute cleanliness and freedom from silver, pyro or hypo is necessary. Neither should the print be touched by the finger. Normal exposure and correct development gives a rich and vigorous print. Over-exposure produces a flat, gray image, or sunken-in look, or, sometimes, an intense black print. Under-exposure is shown by the shadows being inky and the high lights chalky, and a general want of detail. Yellowness of the whites is due to insufficient acid in the clearing bath or imperfect washing between the clearing and fixing baths.

BROMO-TRANSFERROTYPE PAPER—A bromide of silver emulsion coated upon a substratum on paper which, after development and fixing, may be stripped from its paper support and transferred to other surfaces. Producing pleasing transparencies upon opal plaques, tiles, etc. Development the same as bromide paper.

BROMINE— $\text{Br} = 80$ —Was first obtained by Balard, in 1826, from the salts left by evaporation of sea water. A dark, heavy, red liquid which becomes a black solid when its temperature is lowered to 8° below zero, and boils at 145° F. Mercury and bromine are the only two elements which are liquid at ordinary temperature. It has a strong, irritating smell and is very poisonous. It is prepared by

heating potassium bromide with sulphuric acid and black oxide of manganese. It is slightly soluble in water, more freely in alcohol, and most abundantly in ether. The aqueous solution bleaches.

BRONZING—A peculiar metallic luster seen on looking at the shadows of prints at different angles, and is generally regarded as the proper time to stop printing. This appearance usually disappears in the fixing bath. Paper sensitized on a very strong silver bath shows this appearance much more frequently than other grades.

BRUSH—The brushes required in photography are of different shapes and sizes, and of various material.

Bristle—Flat, and used principally for mounting prints, etc., from $1\frac{1}{2}$ to 3 inches wide.

Badger Hair—Round or flat, and should have the hair rather short.

Camel's Hair—Round and flat. The round ones are of various sizes (from a point up), and are used to cover blemishes in the plate or print. The flat ones are extremely useful to dust the plates before placing them in the holder, and also before development. To preserve these hair brushes they should be kept free from dust, and in a box in which there is some camphor to prevent the ravages of insects.

The Air Brush is an ingenious contrivance to deliver a minute spray of color at will upon crayon and water color portraits.

Buckles' Brush—In the early days of photography this brush was much used for spreading solutions on paper on which negatives were taken. It consists of a thin glass tube, the diameter somewhat larger than a common lead pencil, or from 3-8 to 6-8 of an inch. Into one end of this is drawn, by means of a piece of string or fine wire, a tuft of cotton wool, a moderately large head or bunch of cotton being allowed to remain outside the end of this extemporized brush.

BULL'S EYE—A condensing lens used to concentrate the rays of light upon an object, upon the stage of the microscope, etc.

BURNISHING—Prints are passed over or between the surfaces of heated rollers of a mechanical contrivance called the burnisher, having first been lubricated, as it is called, by being rubbed with a cake of soap (Castile), and then wiped carefully with a cloth in two directions, or brushed over with a solution of 5 grains of the soap dissolved in 1 oz. of alcohol and allowed to dry. The heated rollers must not be too hot, and no stoppage must occur during the time the print is passing through the rollers. Should this occur, an indelible line

will be made across the print. Care should be exercised to prevent the rollers from becoming scratched. If such should happen, they should be repolished by a paste formed of the finest emery ground up in olive oil.

C

CABINET PICTURE—Originally referred to pictures of a size suitable for a small apartment, but now refers to those measuring $4\frac{1}{4} \times 6\frac{1}{2}$ inches

CABINET FOR SENSITIVE PAPER—A box constructed to hold sensitive paper in sheets of $6\frac{1}{2} \times 8\frac{1}{2}$ or larger, when laid down flat, and they are retained in this position by a movable weighted lid, which rests on the paper and keeps them flat, while capable of being instantly removed. Thus the paper is shielded from the light; even the hinged lid of the box is open. If made of red cedar, and the paper placed between blotting paper that has been treated to a bath of a saturated solution of bicarbonate of soda, and then thoroughly dried, ready sensitized paper can be kept for months.

CADMIUM— $\text{Cd}=112.3$ —This metal was discovered in 1817 by Stromeyer and Hermann. It is found combined with zinc in the various ores of that metal. Zinc is therefore a common impurity in the commercial salts of cadmium. It is a white, lustrous metal, resembling tin. The stronger acids attack it. Metallic cadmium is precipitated from any of its solutions by zinc. Powdered cadmium is used in photography to remove free iodine from collodion.

CADMIUM BROMIDE— $\text{Cd Br}_2 + 4\text{H}_2\text{O}=344$ —May be prepared by digesting powdered metallic cadmium with bromine and water. Evaporating the solution, needle-shaped crystals of cadmium bromide combined with four equivalents of water are formed. By careful handling the water of crystallization can be driven off. Owing to the stability of this salt, and its solubility in collodion, ether, and alcohol, it has been much used to procure the bromine which is required for the production of the silver bromide, the sensitive compound now so universally employed in photography.

CADMIUM IODIDE— $\text{Cd I}_2=366$ —Prepared by digesting the powdered metal with iodine and water. By evaporation of the solution, flat pearly crystals of cadmium iodide are obtained, soluble in water, and is one of the few iodides soluble in alcohol. It is used for the purpose of iodizing the collodion in the wet process.

CALCIUM— $\text{Ca}=39.9$ —Is one of the most abundant and widely diffused of the metals, though it has never been found in the free state. As carbonate it occurs in a great variety of forms, constituting, as

limestone, entire mountain ranges. It is a light yellow metal, of sp. gr. 1.5778, about as hard as gold, very ductile, and may be cut, filed, or hammered into thin plates.

CALCIUM BROMIDE— Ca Br_2 —200—Obtained by passing hydrobromic acid into an aqueous solution of calcium hydrate (slaked lime). Evaporating the solution, crystals resembling silky needles are formed. Its properties are similar to calcium chloride.

CALCIUM CHLORIDE— $\text{Ca Cl}_2 + 6\text{H}_2\text{O}$ 219—Prepared by dissolving marble (calcium carbonate) in hydrochloric acid, also as a by-product in the manufacture of ammonia and potassium chlorate. Crystals large and transparent, extremely soluble in water, producing great cold, and deliquesce when exposed to the air. It is also freely soluble in alcohol. Applying strong heat, the water of crystallization is driven off, leaving the pure anhydrous salt as a white, colorless mass. In this state it absorbs water with great rapidity, and is much used for drying gases and liquids, in which it is insoluble. Gelatine plates are dried, and various sensitive papers are kept dry, by keeping the chloride of calcium in a small metal box, at the bottom of the box containing them. Is also used as a reducer for bromide prints.

CALCIUM IODIDE— Ca I_2 —294—Prepared by dissolving calcium carbonate in hydriodic acid. Its properties are similar to calcium chloride.

CALCIUM OXIDE— Ca O —56, quicklime—Prepared by heating carbonate of lime, the heat driving off the carbonic acid gas. As quicklime rapidly absorbs moisture from the air and crumbles away, it should be kept in well-stoppered bottles. Cylinders of hard quicklime heated by an oxy-hydrogen flame are used as a source of light in the oxy-hydrogen lantern.

CALORIFIC RAYS OF THE SPECTRUM—It was long known that the various parts of the spectrum differed in their calorific or heat-producing effects. The further away from the violet toward the red, a higher temperature was shown, which for a time caused some discussion, prisms of different substances giving different results. With prisms of water, the greatest heat effect is produced in the yellow; with one of alcohol it is in the orange yellow; with crown glass it is in the middle of the red. (Seebeck's experiments.) Melloni, by using prisms and lenses of rock salt, and availing himself of the extreme delicacy of the thermo-electric apparatus, first made a complete investigation of the calorific properties of the thermal spectrum, confirming and extending Seebeck's observations. The

BOOKS AND EXCHANGES.

THE ENGRAVER AND PRINTER.—No better proof of the progress of "process work" in this country could be given than the fact that a leading firm of process workers, the Boston Photogravure Company, has taken in hand the publication of an illustrated monthly magazine, having for its special field the diffusion, by means of cut and text, of information regarding the capabilities and adaptabilities of the newer methods of illustration. The first number is before us and it is full of promise. Attractively printed on fine laid paper, the beauty of the text is enhanced by the cuts, of which there are no less than fourteen, illustrating several different methods of "process work." The half-tone of Harlow's "Swallow's Cave, Nahant," is easily the best of the lot, although a better example of mastery of technical difficulties is shown in the mezzotype of "Mignon," which shows the capabilities of a method as yet but little worked in this country, but which evidently has a future before it. Another fine example of mezzotype work is shown in the "Column Decorated in Stucco," in which the structure of the stone is rendered with a faithfulness unknown to the so-called half-tone process. The cover is embellished with a portrait in colors from a drawing by Louis E. Harlow. A notable feature is the large color supplement reproduction of Barsi's "Spring," in which the brush marks and the touch of the artists are wonderfully well reproduced. The letter-press contains instructive articles on "Color Work," "Half-Tones," "Press Work," "Japanese Art in Boston," "Evolution in Art," and "Mezzotypes." \$2.00 a year. The Boston Photogravure Co.

We shall be pleased to furnish *Engraver and Printer* in connection with the *AMERICAN AMATEUR PHOTOGRAPHER* for \$3.00.

TRAITE ENCYCLOPEDIQUE DE PHOTOGRAPHIE.—By Dr. Charles Fabre, Paris, Gauthier Villars et Fils. The nineteenth part treats of the scientific applications of photography in astronomy, microscopy, etc., with instructions for aerial work from kites and balloons, photographing through telescopes, the application of photography to the problems of surveying and other similar adaptations of the science.

G. Gennert has just issued a new and revised catalogue of his photographic specialties, which he will gladly send on application.

From W. H. Walmsley, Ltd., we have received a conveniently arranged pamphlet for recording the details of exposure. It is a handy little book.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

We have received a very interesting 8x10 photograph of Colorado scenery from Mr. C. M. Penden, of Lanford, Colorado, taken near his home. He used a Waterbury Lens Stop f-35, gave two seconds exposure, and developed the plate with Ferrous Oxalate, which he prefers. He reports that he likes the *AMERICAN AMATEUR PHOTOGRAPHER* better every month.

The Eagle Ortho-Plate.—Dr. Higgins' testimony in favor of these plates, which will be found in our advertising pages, conclusively proves the truth of the statements regarding their speed and general excellence, made by the manufacturers.

United States Photographic Patents

Issued in February, 1891.

FEBRUARY 3d.

- 445,550—Photographic Camera. W. H. Fuller, Passaic, N. J.
445,561—Camera Attachment. C. L. Knox, Nashville, Tenn.
445,581—Photographic Printing Apparatus. R. L. Wynkoop and J. M. Kemp, Paterson, N. J.
445,639—Photographic Cabinet. O. M. Herberg, Hendrum, Minn.
445,805—Photographic Background. W. G. Entrekin, Philadelphia, Pa.
445,861—Cabinet for Photographic Plate Holders, Negatives, and Stock. G. H. Richards, Philadelphia, Pa.
445,911—Photographic Apparatus. E. V. Swinden and J. Earp, Liverpool, England.

FEBRUARY 10th.

- 446,004—Method of Producing Colored Impressions. R. Schorr, Württemberg, Germany.
446,045—Photographic Camera. F. Whitney, Chicago, Ill.
446,238—Stereopticon. A. T. Thompson, Boston, Mass.
446,368—Photographic Camera. C. Whitney, Chicago, Ill.
446,369—Photographic Camera. C. Whitney, Chicago, Ill.
446,370—Photographic Plate Holder. C. Whitney, Chicago, Ill.
446,371—Photographic Plate Holder. C. Whitney, Chicago, Ill.
446,372—Photographic Camera. C. Whitney, Chicago, Ill.
446,373—Supply Case for Roll Holders in Photographic Cameras. C. Whitney, Chicago, Ill.
446,374—Photographic Camera. C. Whitney, Chicago, Ill.

FEBRUARY 17th.

- 446,529—Photographic Shutter. G. W. Low and W. Shakespeare, Jr., Kalamazoo, Mich.

FEBRUARY 24th.

- 446,880—Shutter for Photographic Cameras. H. B. Norton, Minneapolis, Minn.
446,891—Method of Producing Intense Light by Magnesium or other Glowing Materials, J. W. C. C. Schirm, Berlin, Germany.





NEGATIVE BY W. A. PEVEAR.

A GLIMPSE OF THE LYNN PUBLIC PARK.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

BOSTON, MASS., APRIL, 1891.

No. 4.

Our Illustration.

THE NEW public park at Lynn, Mass., is one of the features of the city. Through the courtesy of the *New England Magazine* we are enabled to give our readers a characteristic view in the park in Mr. Pevear's "Glimpse of the Park," which forms our frontispiece. The illustrations which accompany the review of the Lynn Camera Club's recent exhibition are likewise due to the kindness of the publishers of the *New England Magazine*, which will publish in June a profusely illustrated article on Lynn and its vicinity.

Seasonable Suggestions.

THE return of spring brings to most of our readers a renewed interest in photography in the open. Every country-side will soon be in good photographic condition. There is no more favorable season for photographing nature than the next month or two. Everything is young and fresh, and the foliage is just sufficiently developed to clothe the trees in grace of outline without obscuring too much of what one would most like to have impressed on the sensitive film. Charming etching-like effects are now possible to the camerist. But it is not so much of this we wish to write, but rather to call the attention of our readers to the probable benefits of deciding on a settled plan of photographic work for the coming season. Most of us attempt too much in our camera work. To-day the sea-shore tempts; to-morrow the woodland glade sees our camera set up in its deepest recess. Far better for us all to spend a whole season on one class of work until we have mastered it and made it all our own.

What could be more delightful than to follow, camera in hand, the course of some brawling mountain brook from its source among the hills down to its mouth in some slowly winding river, taking characteristics bits here and there, visiting it again and again under varying conditions, until we had

caught its every mood of mirth or anger? Thus would we have learned how best to photograph one subject at least.

The ever-changing scenes of farm-life, homely as they seem, hold a possibility for picturesque presentment as yet but little exploited by the camera. The plowman and his patient team, the sower, the merry hay-makers, the harvesters, the farmer's lad driving the cows to or from the upland pasture; these and many other similar scenes might well tempt the camerist to adventure upon a field so rich in promise. The country highway with its picturesque rail fence overgrown with weeds and brambles, now dipping down into a shady dell with a tiny rivulet, spanned by a rustic bridge, now climbing the long hill from whose top the whole country-side lies outspread before the wandering amateur, affords an endless succession of charming subjects.

But why waste further words when sufficient has been written to point the moral of our tale: "Confine yourself to one class of subjects until you have mastered it before seeking other worlds to conquer."

Rough Surfaces and Their Preparation.

II.

BY W. H. BURBANK.

ONE OF the easiest methods of printing on rough surface papers is found in the many modifications of iron printing, which are far too numerous for me to mention all in this rambling series of papers. The well-known "blue" process gives surprisingly beautiful results on rough surface papers, if care be taken to brush the solution well in, but this process is so well known that I need not take time and space to describe it here.

A very promising process has been worked in England for some time under the name of kallotype, of which I gave a description with some notes on my experiments with the process in this magazine last May. The process is not so well known here as its merits deserve, and as later experiments of my own have served to confirm my original good opinion of it, I propose to describe it in *extenso* in the present paper. The sensitizing bath is made by dissolving ninety-six grains of citrate of iron and sodium and twenty-four grains of oxalate of potash in one ounce of water. This is evenly applied to the paper by brushing, and the paper is dried in the dark. The sensitized paper keeps well and prints rapidly. The color is a light lemon yellow, and when exposed under a negative a reddish-brown image is formed. The printing should be continued until a fairly strong image is visible.

The next step in the process is to strengthen or develop the image by floating it on the following bath:

Nitrate of silver,	. . . . .	50 grains.
Citrate of soda,	. . . . .	1 ounce.

Bichromate of potash,	1 grain.
Water,	10 ounces.
Ammonia,	$\frac{1}{2}$ dram.

The silver is dissolved in one ounce of the water, and the citrate and bichromate in the remainder; the two solutions are mixed, and the resulting precipitate of citrate of silver is redissolved by adding the ammonia. Care should be taken to add only just enough to redissolve the precipitate. If the solution shows a strong alkaline reaction when tested with litmus paper, a few drops of nitric acid should be added, the object being to obtain as nearly neutral a condition as may be. After filtering, the bath is ready for use, and can be used repeatedly, but it should be filtered just before using. The prints are floated, face down, on this bath, and the image develops instantly with a pleasing bluish or brownish-black tone. The color depends largely on the nature of the paper used. One second on the bath is sufficient to impart the tone and nothing is gained by prolonged floating.

As the bath stains the fingers badly, the prints should be handled with rubber gloves or, as I prefer, with a wide pair of tongs made by bending a strip of celluloid in the middle and softening the bend in hot water, thus forming a sort of pliers by means of which the prints can be removed from the bath without staining the fingers. If the prints were washed immediately in water they would spot and soon fade. In order to prevent this, they are placed for ten minutes each in three special baths, of which the first is as follows:

Developing solution,	$\frac{1}{2}$ ounce.
Citrate of soda,	2 ounces.
Water,	20 ounces.

Washing baths 2 and 3 are identical and are as follows:

Citrate of soda,	1 dram.
Ammonia,	2 drams.
Water,	40 ounces.

The first washing bath soon discolors, but can be used many times, but it is best to filter it just before it is used. The other washing baths can be used until they show a strong discoloration, when they should be discarded and fresh ones mixed up. When removed from the last washing bath, the prints are washed for ten minutes in running water and then hung up to dry.

As will be evident from this description, the process is simple and inexpensive, while the results are little inferior to platinotype prints, with the decided advantage that the prepared paper is not affected by dampness.

I have lately seen some prints made by a friend on Japanese parchment paper which are very near perfection in photographic printing, coming nearer to giving an etching effect than anything I have seen in a long time. The artistic effect of the prints was greatly heightened by the fact that, while the pictures were only 6 x 8 inches, they were printed, under masks, on paper 8 x 10 inches, thus leaving a broad India tint margin all around

them. These prints would attract attention in any exhibition, but the high price of Japanese paper will probably prevent many from trying it, to say nothing of the difficulty of giving it an even coating. I am told, however, that the Kalotype Company of Boston will soon be prepared to supply the paper at prices which will make the process a formidable competitor of silver printing, besides providing artistically inclined amateurs with a paper which will open up a new field in photographic printing. There are no secrets about the process and no patents connected with it. Any one who chooses may prepare his own paper and try the method for himself.

Photographic Illustration.

BY ROGER CUNNINGHAM.

IT APPEARS to me, after careful inspection of the work reproduced in the various photographic journals, that our enthusiastic workers, in undertaking to invade the fields of imaginative art and illustrate poems, make composition pictures of complicated subjects, etc., are attempting more than can be carried to a successful issue. These subjects when removed from the field of ordinary genre illustration (which photography often fairly reaches) require to be treated in what may be properly termed the "grand manner." At this time, when photographers are reading essays on art, I would commend highly the excellent "Discourses on Art," of Sir Joshua Reynolds. They are excellent reading for artists who paint over into photographic bounds, and for photographers who seek to capture, with reflected light and chemicals, the dim outlines of imagined form. They will assist in forming an idea of what the "grand manner" in imaginative work is;—it is a solid reality, and not merely a "hifalutin" expression. The "art of leaving out" has something to do with it, and the lens unfortunately cannot leave anything out.

A painter artist of experience, trying to represent the same subjects, would be thrown into a state of despair if required to gather in his studio and pose, all at once, all his models, each perfectly representing the character assigned, in face, figure, carriage, and dress, his accessories, surroundings, and background, and then in addition required to achieve the *mise-en-scène* in one sitting with no chance for reconsideration. The more competent the artist, the more surely would he declare such an attempt a chimerical dream of the unattainable, and renounce any commission, however lucrative, which depended on such impossible conditions. To paint, even in black and white, a fairly good work of imaginative art requires frequently, even for one figure, the posing and careful study of several models, with a final blending of their excellences in one ideal figure; repeated studies of drapery and lighting, and sketching of accessories, often only to be blotted out as detracting from the figure, with the centralization of light upon, and the

detail in, the parts of greatest interest, the other portions being subordinated by treatment in lower keys and broader handling; and nearly all of this is manifestly impossible for the photographic artist. When works requiring such treatment are attempted in the photographic way, it only serves to attract legitimate criticism to the result of much misguided, though earnest industry and thought. An art first feels its full strength when it realizes its limitations and ceases to fritter away energy in the attempt to transcend them. The field is wide enough for all to seek and find laurels without attempting to portray the tragic scenes of "Evangeline," or "Enoch Arden," much less "King Lear," or "Hell, Purgatory, and Paradise." In astronomical and micro-photography, in large portraiture, in the never-ending charm of landscape, and in pure genre-figure work, simply grouped, in photography of flowers, insects, domestic animals (poultry and sheep in particular) in these are fields where the enthusiast with the camera may pursue and overtake him with the pencil, and never exhaust the riches of his subject or grieve over a work "almost a good thing," but spoiled by the misfit of some integral part. Do men grow as Greek statues? Can your friend, posing as Rip Van Winkle, assume at the word "ready," the age added to a youthful frame by twenty years of slumber amid the storms of the mountains? Make up for the part you say? It's no good. Does the photo of Joe Jefferson in that part convey the same idea, the same emotion that you bring away from seeing him act the part? The painter can and does paint that feeling which the photograph of his model can never convey. We can get other effects, just as delightful and which the painter may envy us, even as we envy him his power. Don't let us try to mix the two styles and thus spoil good picture making. If illustration must be executed photographically let it be of still life, or in the lines already mentioned. It might come once or twice in a life-time to an artist to succeed in an ideal composition of lofty motive, if simple in arrangement and severe in the broad treatment or absence of accessory, but hardly more often.

All of which is submitted in a spirit of due humility by one whose business it is to work in a small corner of the art field, rather than to pose as a teacher.

The Lynn Camera Club Exhibition.

THE SECOND annual exhibition of the Lynn Camera Club brought out a large number of prints of unequal merit. While two or three of the exhibitors showed good artistic taste in the arrangement of their compositions, fully one-half of the prints exhibited would have been improved by judicious cutting down. In very many cases there was a redundancy of foreground, betraying a disinclination to make the print any smaller than the original negative, despite the lesson taught by many exhibitions that most

negatives give much more artistic prints by judicious pruning. Another weak point with many amateurs is shown in Mr. Bacheller's "Pulpit Rock," which would have been greatly improved had the lens been pointed more to the right, showing a wider sweep of the sea which is a prominent feature of Nahant scenery.



E. F. BACHELLER.

PULPIT ROCK, NAHANT.

Mr. Pevear's "Glimpse of the Lynn Public Park," which forms our frontispiece, is an example of good composition, as is also Mr. Darcy's "Summer Rambles Around Spring Pond," while Mr. Bacheller's "In Paradise Woods" would have been improved had less of the view on the left been included.

It is manifestly impossible to mention all the pictures in the exhibition; all that we can hope to do is to call attention to a few of the more meritorious exhibits, among which those of Mrs. Jeannette M. Appleton easily take the first place for artistic merit. Mrs. Appleton brings to her photographic work a fine artistic sense trained by long study in the best Parisian ateliers, and her prints always repay careful study. Her "Listening to the Voices in the Pines," which took the silver medal in the contact bromide class, showed much of artistic feeling, and the same may be said of her large bromide print of the horse "Mat Morgan."

Mr. Bacheller's bromide enlargement, "Branch of the Saco River," well deserved the silver medal which was awarded it. Mr. W. W. Griffin's "And This is the Way They Looked," a group of tourists returning from a trip to the Cave of the Winds, Niagara, easily captured the silver medal in the silver print class, and Mr. Pevear's "Scene in the Park," already mentioned, was awarded the silver medal in the miscellaneous class. In the

transparency class Mr. Bacheller received the award for a charming transparency of "White Horse Ledge."

Coming now to a more detailed description of those exhibits which were not medaled, special mention should be made of Mr. Bacheller's bromide enlargement of Jackson's Falls, in which the figure of the genial treasurer of the American Photographic Conference is a conspicuous object. Other good bromide enlargements were G. C. Hovey's "Mirror Lake," E.



E. F. BACHELLER.

"IN PARADISE WOODS."

Williams' two companion pictures, "Morning" and "Afternoon," scenes in the hay field. Mr. Bacheller had a frame of eight contact bromides which would have been improved had two or three of the prints been left out, the effect being of over-crowding.

The best prints in Mr. Rosebrook's exhibit were "Whittier's Home" and the Saugus "Milldam." Mrs. M. E. Whiton proved her title to good work by her silver prints, "Old Oaken Bucket" and the "Saw Mill," both of which showed careful arrangement and good technical skill. "View on Suncook River," while showing a pleasing softness, would have been improved had a portion of the foreground been cut off. In "Breed's Pond" Mr. G. C. Hovey showed thoughtful work, while his "Surf at Nahant" was one of the best things in the exhibition. Mr. J. W. Bowley's "Arch Bridge" was easily the best of his exhibit. A noticeable feature of the

exhibition was the preponderance of bromide and Omega prints, showing that the tendency among amateurs is towards the easy methods of printing. Platinums were conspicuous by their absence, less than a dozen being exhibited.



J. W. DARCY.

SUMMER RAMBLES AROUND SPRING POND.

We noticed some changes in the interior arrangement of the rooms, the dark-room having been moved down stairs and an enlarging room having been added to the rear of the building. The members show an enthusiastic and intelligent interest in the art, and there is no question that the club has done a grand work among the amateurs of Lynn.



E. F. BACHELLER.

SURF ON THE LYNN SEA COAST.

RECENT EXHIBITIONS.

THE EXHIBITION OF THE NEW YORK CAMERA CLUB.

THE second annual exhibition was held at the rooms of the club, 314 Fifth Avenue, between March 4th and 21st, and was quite largely attended.

A very tasteful catalogue was furnished to visitors, and what was a great convenience was the arrangement of the pictures in regular rotation according to the numbers in the catalogue. The exhibition was under the supervision of a special committee: Lindsay C. Ivory, Chairman, Samuel W. Bridgham, George Henry Fox, M.D., William Herbert, C. Volney King, Walter L. Pierce, and Sanford B. Pomeroy. There were 162 frames. In looking over the work sixteen portraits of merit were noticed by Mr. James L. Breese; the models were graceful, but the pictures would be improved by a little more contrast. The best ones were 72, 79, 82, and 84. Scenes near Buchanan, Va. (142, six views), by David Williams, were very good. A bromide enlargement (140), by Miss Frances V. Stevens, from a 4 x 5 negative, was pleasing. Studies in posing (58), by Miss Mary E. Martin, consisted of four poses by the same person; they were easy and natural, but the prints were not quite clear. "Flowers" (59), by Mr. William M. Fraser, on chloride mat surface paper, were very well done. Surf views at Newport (2), by Mr. Henry R. Taylor, were especially good instantaneous effects. Copies of a miniature (4), by William Bunker, were also to be commended for their clearness and crispness. A plain silver print (20), from an enlarged negative, entitled "The Broken Bridle," by Mr. David Williams, was fairly good, but being vignettted is not benefited as a picture by having any part cut off. Scenes on the St. Lawrence (43), by W. J. Cassard, of the views is very good, but nearly spoiled by want of detail in the high lights and the dog's position. A bromide enlargement, Sachnest Point, Newport (33), by Mr. Henry R. Taylor, one of the best things in the exhibition, the light and reflection on the water combined with the cloudy sky, made a picture worth looking at. Portraits, by Mrs. R. P. Lounsbery (26). The old man's figure would have been improved if the image on the plate had been smaller. As it is his hands and part of the chair are cut off. "Old Mill on the Ausable River" (67), a bromide enlargement, by Mrs. Walter L. Pierce. She evidently lacks experience in this direction, as the picture was blurred and chalky. A very good snow effect, called "Winter in New England" (69), by David Williams. Some very clear prints of Mr. Edmund Russell in Turk costume (61), by Miss Mary E. Martin. The posing was a trifle overdone, giving too much of a stagey effect. "Waiting" (47), by Dr. Edward P. Fowler. The subject was good but the contrasts were too strong. In 37 and 46 Mr. Lindsay C. Ivory displayed excellent judgment in selecting attractive engravings to copy. These were photo-

graphs of engravings and were quite good. Perhaps his platinotypes in frame 87 were as fine as anything he had, showing "Some Recollections of the Head Waters of the Aroostook." They were very carefully arranged. Mr. Franklin Harper exhibited thirteen frames of platinotypes of figure studies and landscapes, all very meritorious. Those of special interest were 152 and 161. A sail boat and group of cows (96 and 94), by Mr. David Williams, were very good, so was 162, a bromide enlargement from a 4 x 5 film negative, by Miss F. V. Stevens, of a view in Nürnberg.

Commenting generally on the work of the exhibition, it was found to contain a number of bromides and many small hand camera views. As regards the interiors displayed, in none was the point of view very well chosen.

ENGLISH NOTES.

BY THOMAS BOLAS.

Professor Lippmann and the Production of Colors by Photographic Means.—The ordinary English newspaper is remarkable for the fact that it allows reporters, quite ignorant of scientific and technical matters, to write confidently or oracle-like regarding such things; and it is rare indeed for an English newspaper to send a scientific expert to investigate when the subject at issue is quite beyond the range of an average "reporter." It is then to one of the newspaper men that London owes something like a sure and certain belief that the problem of photography in colors is solved, the *Daily News* having published an account, evidently written by one not even having an elementary knowledge of physical science, of certain experiments made by M. Lippmann, of Paris, which experiments are referred to as practically solving the problem of photography in natural colors. The public, therefore, believe the problem to have been solved and constantly apply to the photographer to have portraits taken in accordance with the new invention. As far as the accounts go, all that Mr. Lippmann has really done is to expose a very thin and transparent film for a long time to an intense light with the result that after development and fixation certain interference colors are visible on the plate; and the results are more readily obtained if the film is, during exposure, in contact with a reflecting surface. Such results can very readily be obtained by any experimenter who will prepare a very thin film of transparent emulsion and give an exposure of several hundred times that normally required. Interference colors result, like those on glass which has been corroded by long exposure to impure air, or by aqueous solutions under pressure; but a very cursory observation will show that these colors have no relation whatever to the colors of the light which has been instrumental in producing them. Still, by giving longer or shorter exposures, some variation in tint may be obtained over the very short

range obtainable, and one can understand how, by giving carefully measured exposures to the several tints of a window having three colored panes (colored screens being used to cut off the tints not required) sufficient approximation has been produced on the plate to those tints, to impress a newspaper correspondent eager to send some remarkable news to his headquarters. The fact seems to be that Lippmann has certainly obtained colors on his plate, but *not the right colors*—not the colors of the original objects, and many have done this before him. A correspondent of *Photography* thus describes Lippmann's results, and the description is such as would apply well to most scraps of ancient and corroded glass, such as are found among the remains of the works of the old Romans: "The green and yellow are very strong, the latter looking like a deposit of brass. Such is the metallic appearance of the color. The lines on the duller plates remind one of strips of bright steel after they have assumed the colors given in tempering. Seen by transmitted light the negative of the spectrum rays appears only a red-rust color, with very slightly varying degrees of intensity. Thus there is no color in the pellicle other than exists in gelatine under various forms of development. The plates strongly remind one of the iridescent coloring which sometimes result with negatives left a considerable time in the developer."


Authorship of a Photograph.—It has often struck me as remarkable that although it would be considered disgraceful for an amateur to exhibit as his own a photograph done by another person; it is not uncommon for the proprietor of a photographic business to exhibit, as his own work, photographs in the production of which he has taken no part whatever, but which he has simply paid another person to make. At any rate this matter is now being freely discussed in photographic circles, and it seems generally conceded that if it is disgraceful to make a false claim of authorship in one case, it is disgraceful in the other case; in other words, one who pays a man to do something for him is not justified in claiming the result as his own work. The discussion has arisen from the fact that with the *Year Book of Photography* for 1891 was issued a print of a Quagga, and under it was printed "Negative taken in 1872 by F. York," and in the *Year Book* itself the editor made reference to the fame Mr. York might deserve on account of being the author of this picture. This does not in itself amount to a claim on the part of Mr. York to have been the producer of the negative, although one would have supposed that if he were not the author he should have at once disclaimed. Soon, however, we find a claim on the part of Mr. B. Harvey as the author, and still Mr. F. York is silent, but soon appears a letter in the *Photographic News* signed "York & Son," which seems to tacitly admit Mr. Harvey's claim, but saying that this gentleman was "merely an operator on weekly wages while photographing in the Zoo for Mr. York." Under these circumstances it seems that Mr. F. York should

clear up the matter by saying definitely whether he or Mr. Harvey is the author of the negative, especially as Mr. York is well known as the exhibitor of many fine photographs which those interested in photography in general have assumed to be his own work.

Mr. Warnerke and Collotype Printing.—Instead of using glass as a support for the collotype film, Mr. Warnerke has recently been showing how readily the so-called vegetable parchment lends itself to this end, and its use is facilitated by the fact that vegetable parchment coated with plain gelatine is sold commercially in connection with an autographic printing apparatus known as the "Black Autocopyist." The gelatinized parchment is sensitized by soaking in a three per cent. solution of bichromate of potassium, and is squeegeed face downward on a plate of glass (previously rubbed over with French chalk powder) to-dry. When dry the film can be stripped off, and possesses a smooth surface upon which the finest details of the negative can be impressed. The other steps in the process are similar to what is required when glass is used. only a stretching frame must be used to hold the film down on the bed of the press. The special advantages of using the parchment are the fact that it can always be kept at hand and ready for sensitizing, and that the films can be readily preserved in a port-folio and printed from as copies are required.

Photographic Copyright.—In a bill now before our Parliament it is proposed to so far protect the copyright of the sitter who pays, in his own face, as to make it penal for a photographer to exhibit the result in a shop window "or otherwise" without the written consent of the sitter, but the London Chamber of Commerce is alive to the unreasonableness of the provision "or otherwise," and will oppose the going so far. If such a clause became law, the portrait photographer would have to keep his duplicate copies under lock and key in order to be safe against legal action.

A Series of Experiments on Mixed Developers and on the Result of Using one Developer after Another.

 F LATE, and particularly in connection with eikonogen, there have been several statements as to the effect of mixing one developer with another, and of supplementing the action of one developing reagent by that of another. Thus we have recently seen, in an American photographic journal, a statement to the effect that if there were failure to get density with eikonogen, such could be got by re-development with pyro, and that, on the other hand, if pyro failed to bring out all the detail that was wanted, more could be got out by following with eikonogen, but no details of experiments were given, and we do not know that any have been given in

any other paper. But whether they have or not, a description of a set of experiments that we have recently made to try whether, in the first place, there is any advantage in mixtures of different developers, and, in the second place, whether there is any advantage in following the use of one developer by that of another, may be of some use.

To make such a set of experiments really conclusive is a thing that would involve an amount of labor that no single experimenter would be likely to undertake, as the changes that can be rung on the quantities of the different chemicals used are really indefinite, and there is the further fact that a set of results got with one particular brand of plates would quite likely not apply with another. We give, however, the result of one series of experiments for what they are worth.

What we decided to try to determine for one brand of plates at least was the comparative results of the following developers: (1) Normal pyro; (2) normal eikonogen; (3) normal hydrokinone; (4) a mixture of eikonogen and pyro; (5) a mixture of eikonogen and hydrokinone; (6) development with pyro, followed by that with eikonogen; (7) development with eikonogen, followed by that with pyro; (8) development with eikonogen, followed by that with hydrokinone; and (9) development with hydrokinone, followed by that with eikonogen.

It is evident that, in the case of such a set of experiments, there are possibilities of many errors. The greatest difficulty is to determine how long each developer shall be allowed to act. To develop simply by time, allowing each developer the same length of time, would manifestly be unfair, for there are some developers that will finish their work before others begin to bring up the high lights of a negative, but it does not follow that the slow developer will not in time bring out more than the quick.

After some consideration we decided to develop, in each case, till one of the following results was got. Either (1) parts of the plate quite protected from light began to darken, or (2) it appeared that the density of the high light was getting too dense, or (3) it seemed that the developer had for some time ceased to produce any farther effect.

Another thing that needed consideration was as to what should be considered "normal developer," for this is a thing about which there might be great difference of opinion. We considered the best thing to do was to take just about what developers we would use in practice, and we actually did take the following:

NORMAL PYRO.

Pyro.	5 parts.
Sulphite of soda,	20 parts.
Carbonate of soda in crystals,	25 parts.
Water up to	1,000 parts.

NORMAL EIKONOGEN.

Of a saturated solution (at 65 degrees Fahr.) in a	
10 per cent. solution of sulphite of soda,	500 parts.
Carbonate of soda (in crystals),	25 parts.
Water up to	1,000 parts.

NORMAL HYDROKINONE.

Hydrokinone,	4 parts.
Sulphite of soda,	16 parts.
Carbonate of soda (in crystals),	25 parts.
Water up to	1,000 parts.

The mixed developers were made up as follows :

MIXED PYRO AND EIKONOGEN.

To 1,000 parts of the normal eikonogen developer there were added five parts of pyro (a little more than two grains to the ounce).

MIXED EIKONOGEN AND HYDROKINONE.

Hydrokinone,	4 parts.
Sulphite of soda,	12 parts.
A saturated solution of eikonogen in 10 per cent.	
sulphite of soda,	200 parts.
Carbonate of soda (in crystals),	25 parts.
Water up to	1,000 parts.

The developers were all kept at a temperature not varying much from 65° Fahrenheit. In trying one developer followed by another the way of working was this : The whole of the plate was developed in the first solution till one of the three conditions above mentioned was fulfilled. It was then dipped into a dipping-bath half filled with the second developer, and was there left for the length of time that was allowed when the second developer was used alone. For example, five minutes in the case of pyro, as, when that developer was used alone, all further action seemed to have stopped before the end of five minutes, so far as detail was concerned, whilst it appeared that density was likely to become too great.

A subject was chosen that was rather flatly lighted, and a number of plates were exposed on this, giving exposures of about one-third what might be considered a "normal exposure," this being first decided by experiment. It was considered that, by making the conditions thus severe, the qualities of the different developers would be the better shown.

We take here the resulting negatives in the order in which they were developed.

Pyrogallie Acid.—The negative is very dense in the high lights, but is distinctly under-exposed. The color appears good when it is examined alone, but when examined alongside of the eikonogen or hydrokinone developed negative it appears of a yellowish color, which is not perhaps inimical to the getting of good prints, but which certainly offends the eye.

Eikonogen.—This negative has somewhat more detail than that by pyro, and the color is better, but it was found impossible to get much density, even with a very prolonged action of the developer. The negative appears quite flat, but as the lighting of the subject was flat, it may very well be said that the eikonogen gives it a truer rendering than the pyro or the hydrokinone, each of which gives an exaggerated scale of gradation.

Hydrokinone.—This negative is very similar to that developed by pyro, except that the color is distinctly pleasanter. The time taken for development was much longer than either for pyro or for eikonogen.

Pyro and Eikonogen Mixed.—The negative got by this is a very good one. It appears to have all the detail that was got by an eikonogen one, and, whilst not as hard as the pyro negative, it is not so flat as the eikonogen negative. It is, in fact, a very soft and harmonious negative, but still showing some indications of under-exposure.

Hydrokinone and Eikonogen Mixed.—In density this negative is about the same as that by hydrokinone alone, but there is distinctly more shadow than detail, so that the negative is far more harmonious than that by hydrokinone, which appears harsh beside the negative developed with the mixed solutions. There is, in fact, more detail in this negative than in any of the others as yet described, and we incline to describe it as altogether a better negative than any of them. The time taken for detail to begin to make its appearance was considerably less than with hydrokinone alone, and the time taken to gain density was a little less.

Pyro Followed by Eikonogen.—The half of this plate that has been re-developed with eikonogen shows very distinctly greater detail than the part developed by pyro only. Indeed, it appears almost like a fully-exposed negative, having a little more detail even than the negative developed by mixed eikonogen and hydrokinone. The re-development with eikonogen has further completely removed the yellow stain given by the pyro.

Eikonogen Followed by Pyro.—There is much less apparent difference between the two halves of this plate than between the two halves of the last mentioned. Re-development with pyro has added a little to the density, and perhaps even a trifle to the detail, but not at all much. In fact, whilst there appears to be a distinct advantage in pyro followed by eikonogen, there appears to be very little in eikonogen followed by pyro.

Hydrokinone Followed by Eikonogen.—Of this nearly the very same may be said as of pyro followed by eikonogen. The re-development by eikonogen has brought out much additional detail, and has altogether given the appearance of full exposure to that half that has been re-developed, making it contrast strongly with the half not re-developed, which appears, alongside the re-developed half, very much under-exposed.

Eikonogen Followed by Hydrokinone.—In this case, as in that of eikonogen followed by pyro, there seems to be but little gained by the re-development. The density is somewhat increased, but the shadows have an appearance of being "blocked up" without showing any additional detail, so that the general quality of the re-developed half of the negative is somewhat worse than that of the half that has not been re-developed. In this case there is a curious phenomenon not seen in any of the other negatives, the one-half of each of which has been re-developed. There is a distinct and

almost completely opaque line across the plate. This corresponds with the surface line of the hydrokinone developer in the dipping bath. The line is uniformly opaque for a breadth of about one-eighth of an inch, and then shades off into the half that was dipped in the solution. This would seem to indicate that hydrokinone has greater reducing power when in contact with the air than when not in contact, although this seems an improbable thing.

It should be mentioned that before the half of a negative was re-developed the whole negative was, in every case, well mixed.

As we have said, it is not possible to deduce general rules from one set of experiments, but what would seem to be indicated by what we have done may be roughly stated as follows: A mixture of pyro and eikonogen seems to have some little advantage over either of the reagents used alone.

A mixture of hydrokinone with eikonogen seems to have a distinct advantage over either of the reagents alone. Development with either pyro or hydrokinone, followed by re-development with eikonogen, seems to show distinct advantages.

There would appear to be but little advantage in following up developments with eikonogen by re-development with either pyro or hydrokinone.

The last two conclusions may be put in other words by stating that there is advantage in following either of the two density-giving developers by the detail-giving developer, but that there is very little use in following the detail-giving developer by either of the density-giving developers.

It may be contended that, in the cases of the negatives re-developed with eikonogen as good results would have been got by the continued use of the pyro or the hydrokinone, but this is not so. The continued use of these developers would only have resulted in intolerable hardness, nor do we think that any variation of the pyro or the hydrokinone developers alone, or of the eikonogen developer alone either, would have resulted in as good a negative as was got by hydrokinone followed by eikonogen, or probably as that got by pyro followed by eikonogen.

What we have done is a mere fraction of what certainly ought to be done to elucidate this question of the use of mixed developers, or of the use of one developer followed by another, and we hope to hear of farther experiments from the readers of *Photography*.

—W. K. Burton in *Photography*.

T M E

AMERICAN AMATEUR PHOTOGRAPHER.

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No. 4.

W. H. BURBANK.

EDITORS:

F. C. BEACH, New York.

CATHERINE WEED BARNES.

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EDITORIAL COMMENT.

A New Departure.—With a view to increasing the usefulness of the AMERICAN AMATEUR PHOTOGRAPHER, Mr. Burbank will henceforth devote his whole time to the magazine and to experimental work in photography, the results of which will be given from time to time in these columns. While Mr. Burbank does not expect to make any startling discoveries, he hopes that his experimental work may produce, occasionally, results which will have real and permanent value for the readers of this magazine. So far as possible all new processes, developers, methods of work, and suggested modifications of old processes will be carefully and impartially tested, and the results fairly and frankly stated. An important feature of the work, it is hoped, will be the assistance which will be freely given to all who apply for it in the solution of photographic perplexities, trials, and difficulties of all kinds. Mr. Burbank's time and whatever knowledge of photography he may possess is freely placed at the disposal of all, not in a spirit of egotism or in a know-it-all manner, but simply as the time and knowledge of one who

possibly has greater leisure and better opportunities for working out photographic problems than those who may apply to him for assistance.

Photographic Libraries.—A Suggestion to Camera Clubs.—Every camera club with permanent quarters should make a point of developing a taste for the critical study of photography among its members by establishing a loan library of books upon photographic, chemical, and artistic subjects. No one should deem himself an expert in the art, or indeed greatly interested in it, until he has a thorough knowledge of its literature as well as its technique. A mind well stored with a knowledge of the limitations, achievements, and promises of the photography of the past generation cannot fail to be appreciative of the methods of to-day—to say nothing of the fullness and ripeness of judgment which such reading must give. There is a culture in photography, but it is known only to him who is versed in photographic lore. Our camera clubs should aim to impart this photographic culture; they should be not merely pleasant lounging places, but centers of an ever-deepening interest in and enthusiasm for an art which is at present far from receiving its just dues as part of a liberal education. The printed image is not all there is to photography. Many a man who turns out less than a score of prints in a season is a truer photographer than many others who reel off yards of flexible film. The writer probably makes fewer prints in a season than the majority of amateurs, and the few he makes are but modest things, but he yields to none in his love for an art which has taught him to see Nature in a new and fairer garb, and opened up to him fields for experiment and research previously unknown. More books and fewer cameras, more reading and less negative making might not be a bad thing for all of us.

The "Kalotype" Process.—The increasing cost of platinum, and the rapid deterioration of the sensitized paper have compelled many admirers of the beautiful platinotype process either to abandon it or to institute a search for a fairly reliable substitute. What is wanted by many of our best workers is a process for mat surface printing, applicable to different varieties of paper, simple and certain of manipulation, inexpensive, and capable of producing prints with the soft, dark tones which make a good platinotype print so charming and attractive. Recent experiments would seem to show that such a substitute has been found in the "Kalotype" process, in which a paper, coated with a salt of iron is exposed under a negative until a weak brown image is formed, which is strengthened and given a pleasing dark tone by floating on a weak silver bath and cleared by two or three successive washings in citrate of soda baths. Here we have the freedom from the vexations of toning and fixing in hypo, as in the platinotype process, an image of a tone little, if any, inferior to that of a print in platinum, a very strong assurance of permanency, an economy in cost of working, and an adaptability to all sorts of papers which would seem to assure the process a great popularity as soon as it becomes generally known. We have made

“Kalotype” prints on almost all the papers known to the trade, including Japanese, parchment, linen, Saxe, and Helios, with eminently satisfactory results. The rendering of detail is not far inferior to that given by plain salted paper, the rapidity of printing is much greater, and the prepared paper does not seem to deteriorate. All who have tried the process in this vicinity are loud in its praise, and, after something more than a twelve months’ practical experience with it, we are unable to detect any weak points in it, other than those due to the difficulty experienced by the beginner in judging of the progress of the printing and the unsightly stains produced by the silver bath. The former is soon overcome with a little practice, and a pair of celluloid tongs or rubber gloves gives entire freedom from stains. In brief, tested on its merits as a simple, expeditious, and economical method of producing pleasing mat surface prints from negatives of average density, we believe that the “Kalotype” may well be given a trial.

Toning Baths Containing Salts of Lead.—There has always been a suspicion of the permanency of prints toned in a bath containing a salt of lead. We do not know how far this suspicion has been confirmed by actual experience, and perhaps it would not be an easy task to settle the question. But why should a lead salt be introduced into the toning bath? To the best of our knowledge the manufacturers of the popular Omega paper are the only ones who recommend it. Will they kindly explain the reason for its use? Judging from personal experience its only function seems to be to hasten the toning action, and for this purpose a much smaller quantity than they advise seems to be all sufficient. And while we are on this subject of the formula for the Omega toning solution, we would like to propound the further query as to the utility of the chloride of silver contained in it. It has no toning action, and its only purpose would seem to serve as a ripener of the bath, thus promoting evenness of action. The Omega toning bath is unquestionably a good one, but in view of the fact that a simple *sel d’or* bath has given us as good results, why this seemingly needless complication? Will the manufacturers kindly explain and enable us to give an intelligent answer to numerous inquiries?



CORRESPONDENCE.

My Dear American Amateur Photographer:

My money order for a second year's subscription is probably as eloquent an expression of opinion regarding "our journal" as I can offer. It appears to be "doing as well as can be expected" of a yearling. If I were to act as "special suggester" to the editors of this and all other similar publications, my first suggestion would be to use the blue pencil more freely in editing reports of conventions, local societies, etc., cutting out dry routine business of purely local interest (excepting elections of officers), and briefly summarizing Mr. Blank's successful demonstration of some frequently printed process or manipulation, which he has just found out; and in respect of the other Mr. Blank's demonstration of the widely advertised method of using the likewise w. a. materials of the house for which he travels, reducing it to "honorable mention." Give really new ideas by new men full record. Then these transactions will be read with more interest. If I were to offer the fraternity a hint, I would say, write more generally and frequently for your journal. There are few men in the amateur ranks who cannot contribute something readable once or twice a year, if only disposed to try. Don't compel the editor to do all the writing. It's likely to give him an undue sense of his own importance and not leave him time enough in which to edit. Don't forget to add to each communication the words, "To be used if found available." And don't find fault if he runs the fatal blue pencil through half of it and uses the rest, or even if the whole is edited into the waste-basket. Lots more seeds are ripened than ever sprout, it's Nature's way. Write again next time just the same. A free exchange of thought and new ideas is what is wanted. The editor is paid to know what is thought and what ideas are new. Let's make him work.

Faternally,

ROGER CUNNINGHAM.

S. E. Cor. 31st Street and Prospect Avenue, Kansas City, Mo., 10 March, 1891.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Society of Amateur Photographers of New York.—Saturday, March 7th. *Through Spain and Morocco with a Hand Camera* was the title of a very interesting exhibition of lantern slides, Saturday evening, at Chickering Hall, 18th Street and Fifth Avenue, the work of Mr. Richard H. Lawrence, for the benefit of the society, and was well attended. Dr. E. C. Bolles acted as lecturer and appropriately explained the views, while Mr. Long, of Iatham & Long, operated the lantern. Some of the street scenes in Morocco were the first that have been thrown on the screen, and depicted the various phases of life in that ancient country very vividly.

The views illustrated a Spanish railway station, where it is customary for trains to stop nearly twenty minutes; several pictures of the cathedral at Tarragona, one showing a procession of soldiers entering it being very effective; the old Roman aqueduct near Tarragona, a remarkable double-arched structure; a Catalonian peasant; a girl and old man mending nets; in Valencia, one of the doors of its old cathedral; the Lonja, or exchange, a fine old Gothic building; women washing clothes in a stream near Valencia; in Cordova, the great Moorish mosque, interior and exterior, showing some exquisite lattice work; the "Garden of the Oranges"; the market place, with the two smiling girls; in Seville, the "Golden Tower," showing the Guadalquivir river and the cathedral in the distance; the cathedral and giralda tower; the procession of the Corpus Christi; a street in Seville, covered with awnings stretched from one house to the other; in Granada, the Alhambra

Hill, with towers of its ruined walls; the place of Charles V., built against the palace of the Moorish kings; the beautiful interior of the Moorish palace, with its plain exterior; the Court of Myrtles, the first that is entered (a part of which was recently destroyed by fire); the Court of Lions, with its famous fountain; the window of the room occupied by Washington Irving in 1829, looking out upon the Court of Lindaraxa; views from the watch tower, of the Vega, and Sierra Nevada; the Generalife (summer palace) of the Moorish kings; the Albaycin, or Gypsy quarter, with a very good group of Gypsies. From Gibraltar the Mediterranean was crossed to Tangier, in Morocco. Here views in the narrow streets of Tangier were shown, including also the prison, the governor's palace, exterior and interior court-yard. Others illustrated the caravans of camels; an inn; the town of Foudak, in the interior of Morocco; the town of Tetuan, at the foot of the great Atlas mountains; and streets in Tetuan. Returning to Spain, a remarkable consecutive series of pictures showing all the phases of a genuine Spanish bull-fight, were thrown on the screen; they had been taken at different times at Madrid, Seville, Algeziras, and one was in the old Roman amphitheatre at Arles, in the south of France. This was very picturesque.

First was shown the exterior of the Plaza de Toros, at Madrid; then in sequence the entrance of the toreros, or bull-fighters; the picadores and the bull; horses gored; the banderilleros, sticking barbed sticks into the shoulders of the bull; the third and final act of the bull-fight, the espada who kills the bull with a light sword, and last the body of the dead bull being dragged off by three mules. One picture showed a torpedo barb exploding in the flesh of the animal, which is a species of torture resorted to, to awake his vitality. Not the least interesting feature was the view of the great crowd of spectators looking on.

As an exhibition of what can be done by one person with a hand-camera, the views were most successful and instructive. Mr. Lawrence is to be congratulated in thus being able to entertain so many of his fellow members, and in setting an example worth following. We believe he used a Beck lens in a 4 x 5 Scovill hand camera. Quite a neat sum was realized in behalf of the society.

Tuesday Evening, March 10th.—Regular Monthly Meeting. President James H. Stebbins, Jr., presided, and called the meeting to order at 8.30. The subject of the evening was "Discussion on Lenses for Hand Cameras," but was given up, some of the gentlemen expecting to participate not being present. President Stebbins gave a practical demonstration of the Kalotype process, which was nothing more than an iron salt spread on paper, exposed, then developed on a citrate of silver bath. It was very quick, certain, and easy. The only trouble was the silver stained the fingers. He was experimenting on the silver chemical, hoping some time to eventually produce a compound that would not stain the fingers. The simplicity, cheapness, and rapidity of the process attracted his attention to it. He explained the chemical reactions. Mr. F. C. Beach spoke of a series of experiments he had made on the addition of thio-carbonide (a chemical recommended by Col. J. Waterhouse) to the eikonogen developer, to see if the ordinary negative image could be reversed to a positive during development. Out of five separate trials on bromide paper, the chemicals being measured and weighed and experiments timed, he did not succeed in obtaining a single reversal. But he did find that the addition of the thio-carbonide in certain quantities materially retarded development. In one case the exposed sheet was immersed an hour in a strong developer with thio-carbonide added, but no trace of an image appeared. A specimen of the thio-carbonide crystals was shown. He expected to make from it the tetrathio-carbonid-ammonium-bromide, a few drops of which, it is said, added to the eikonogen developer will produce easy and rapid reversals; he would report upon the subject at a future meeting. His conclusion was, that too much thio-carbonide checked development altogether, less slowed the development very much, but in no case did reversal occur.

Mr. Beach also explained briefly the points of novelty claimed by Mr. Fred E. Ives in his new composite heliochromy, and exhibited a $6\frac{1}{2} \times 8\frac{1}{2}$ specimen colored window transparency representing crystals of narcotine by polarized light, and a colored lantern slide made on the same principle. Both had been kindly loaned by Mr. Ives, and were good examples of the process; they attracted much attention. The slide was exhibited in the lantern, but as the registration of the different prints had not been very accurate, it did

not appear on the screen as sharp as it should. The colors, however, were very delicate. It is the most promising field of color-photography that has yet been discovered. Considerable discussion occurred in executive session on matters of minor importance, then the meeting adjourned.

Friday Evening, March 13th.—Special Exhibition of Lantern Slides. The announcement had been made that slides, colored by native artists, showing life in Japan, was the subject that attracted an overflowing audience. The pictures, two hundred in number, had been loaned to the society by Edward H. Williams, Esq., of Philadelphia. On this occasion one hundred were shown, and were explained by two Japanese gentlemen, which added interest. They illustrated Japanese customs, their dress, scenery, methods of transportation, temples, tea growing, rice fields, and street scenes. The coloring on the figure studies and portraits was very delicate. Altogether the collection was very typical of the country, and the slides as a whole were remarkably good.

Friday Evening, March 20th.—Second Exhibition of Japanese Slides. The crowd at the previous exhibition was so great that the officers decided to exhibit the second half of the two hundred slides in a larger hall. Hardman Hall, corner Fifth Avenue and 19th Street, was the place and was completely filled, though the night was stormy. Mr. J. Wells Champney explained the views. They did not average as good as the first set, but were nevertheless quite as interesting. They included pictures of peasants washing and drying clothes, of a Japanese carpenter, cleaning grain, hulling rice, weaving, coopers making bamboo baskets, tea houses covered with wistaria in blossom, views along the coast, Buddhist priests, musicians, temples, Japanese artists at work, girls embroidering, a toy merchant making toys on the street, plant and flower merchants, manufacturing guitars, general view of Yokohama, and several beautiful views of the scenery in the foreign recreation grounds at Yokohama. Mr. Long, of Latham & Long, operated his dissolving lantern very acceptably. On the larger screen the views showed to much better advantage. A very enjoyable evening was passed.

Tuesday Evening, March 24th.—Special Meeting. The meeting was called to listen to Dr. L. H. Laudy, of the Columbia College School of Mines, lecture on "Electrical Meters." Why he brought this subject, apparently having no relation to photography, before the society, was because of the recent invention of a meter which used photography to record the current. He explained the construction of seven different electric meters, and said the error in calculating the amount of current had been reduced to two per cent., which was the same allowed in calculating from gas meters. The meaning of the electrical terms or units was explained, and several experiments tried to demonstrate them. Models of the different meters were exhibited. The photographic electrical meter was invented by a Mr. Walker, and was the only one that measured and made a record of the strength of the current. A hollow magnet, some six or eight inches long, wound with heavy wire, was shaped in the arc of a circle. Traveling in the magnet was a loose core or selenoid of wire pivoted at its axis, and attached to one arm of this wire was a light metal plate, having a vertical slit in it. Behind this plate was placed a stationary plate, having a horizontal slit, and pinholes at different intervals in one horizontal line, designed to represent hour-marks. In a small box back of this plate was kept a long roll of bromide paper, which was set and kept in motion by a clock-work device, and would run for one month. On the opposite side of the plate was located an incandescent lamp. As the current varied it caused the selenoid in the magnet to move, which changed the location of the plate having the vertical slit; this changed the position of the ray of light correspondingly, causing it to affect the sensitive paper at different points. When the month is up the roll is removed and developed; the variation shows the strength of the current at different times, from which the whole amount used is readily calculated. Dr. Laudy said it was a very recent invention, and was gotten up by a Mr. Walker and was called the Walker meter. He thought the combination of photography was a very clever stroke on the part of the inventor, and was the only meter which made its own record. A vote of thanks was passed to Dr. Laudy, and a request made that he repeat his lecture on the "Arc Light for Projection," which he promised to do at an early day.

Friday Evening, March 27th.—Regular Exhibition of Lantern Slides. For a "Good

Friday" night there was an excellent attendance. Mr. T. J. Burton presided at the lecture stand, while the lantern was operated by Mr. F. C. Beach and Mr. Alfred Shoen. The pictures were the work of the Chicago Lantern-Slide Club, the St. Louis Camera Club, and a few by members of the society.

The work of the Chicago Club was no better than last year, but contained a few group studies of much merit. The fifty slides were made by ten members. The views of particular interest were: "Temple of Fame and Statue of Bavaria," and "Hotel Del Monte," Monterey, Cal., by Mr. E. B. Holmes; a Chinese picture entitled "Ready for an Outing," "Joss House or Wall at Shanghai," by T. B. Rae; "Silk-Cotton Tree at Nassau," by J. C. Patterson; "Balanced Rock," Garden of the Gods, by C. O. Schoemacher; "Castle Geyser, The Cones," "Minerva Terrace," Yellowstone Park, and view of Ducks, and Duck Island, Lincoln Park, by the President, C. P. Stivers; "Let Me Out," a capital picture of a little girl wading in water; also one called "To Please the Children," of a performing bear standing perfectly erect, very excellently done by W. B. Judson; "At the Spring," a most charming composition study by Mrs. N. Gray Bartlett, the grouping, arrangement of the background, and position of the figures was so artistically done that it could not be improved. Another view by Mrs. Bartlett was an excellent interior of the green house in South Park. Her work is always appreciated.

In the St. Louis set was "View on the Maramee River," and an excellent cattle picture, entitled "Fording the Stream," by Mr. John B. Holman; "Judging Cattle at a St. Louis Fair," by Dr. Jules Valle; "Niagara Falls," "Osceola Falls, Wisconsin," "Bear Pits at Fair Grounds," by Mr. William M. Butler; "Rainbow Falls, Ute Pass, Colorado," by Mr. Robert E. Collins; "Drying Cod-fish, Gloucester, Mass.," "Cape Ann, Mass.," and "Berthoud Pass, Road above Empire," Colorado, by Mr. John W. Dunn. All were very clear slides, but lacked the variety found in the Chicago set. It is hoped the club next season will have a larger supply of composition and animal photographs. About forty slides made by members followed. They included views in Amsterdam, by Mr. Abner C. Thomas; in the Adirondacks and North Carolina, by Mr. D. C. Young; views in Holland and Norway, by Miss Elizabeth A. Slade; views in Germany and New York, by Mr. Ferdinand Ruppert, and a number of beautiful figure studies by Mr. Charles H. Davis.

The first annual dinner of the society was given at Sherry's on Fifth Avenue, near 38th Street, on April 3d, and was a great success. The annual meeting of the society occurs on April 14th. On April 10th, Dr. Charles L. Mitchell, of Philadelphia, entertains the society with his excellent slides on "Switzerland through the Camera." The nominating committee appointed by the Board of Directors to nominate officers and directors for election at the annual meeting, are: Dr. John T. Nagle, J. Wells Champney, Alfred Shoen, H. M. Grisdale, and E. C. Slater. Members are busy getting exhibits ready for the Fourth Annual Exhibition. The electric light enlarging apparatus, with two very large condensers, gives good satisfaction and appears to be easily operated. A committee has been appointed to consider the cost and advisability of constructing a first-class, north-light, portrait studio between the two wings of the building. It is probable something of the kind will be built during the coming summer. The Board of Directors were lately photographed in a body by Mr. Charles H. Davis, at his studio in Mott Haven, with excellent success. The picture and single portraits of the officers, done in bromides, adorned the front page of the menu card at the annual dinner, which formed a pleasant souvenir of the occasion.

The Toledo Camera Club.—The Toledo Camera Club wishes to make itself known to the amateur photographic world, it being one of the new additions to that body. The club was formally organized in December last, and now has about forty-five members of both sexes. The rooms, 11 and 12 Hubbard Block, which have recently been occupied, are conveniently fitted up, and contain all the paraphernalia essential to the development of every species of photography. March 4th was the occasion of the first public reception and inspection of the rooms, which were thrown open from 2 to 7 p.m., followed in the evening, at 8, by a stereopticon exhibit of amateur and professional slides, at the First Baptist Church, by Mr. Edmund Locke. The church was well filled, and all present evidenced keen satisfaction with the entertainment. Mr. Locke prefaced the exhibition by saying that the views were developed from amateur negatives by an amateur slide-maker,

and were being shown and explained by an amateur talker. With the exception of some professional slides, all were made by Mr. Locke, H. E. Richards, D. L. Stine, T. H. Parkhurst, F. S. Anable, G. H. Allen, E. L. Griffith, and others. The views were numerous and varied, and ranged from pastoral scenes around Toledo, to excellent reproductions of the Colosseum in Rome, the church of Notre Dame, the ruined palace of the Tuilleries in Paris, the busy Seine, Picadilly in London, and the bridge-covered Thames, and many others; the foreign views being from negatives by Mr. Steine and Mr. Locke.

Most of the club's apparatus was on exhibition at the rooms, arranged in a pyramid labeled "Our Battery," and the walls of the reception-room contained many views of different kinds, by members of the club.

The regular meeting night is the first Monday in the month, with the remaining Mondays set aside as an informal meeting night. The club has officers as follows: F. S. Anable, President; E. L. Griffith, Vice-President; H. E. Richards, Secretary-Treasurer; D. L. Stine and George S. Waite, with the foregoing, forming the Executive Committee. The club will be heard from in the future, and would be pleased to hear from some of our brethren.

California Camera Club.—The first annual meeting of the California Camera Club was held in the new club rooms, Academy of Sciences Building, 819 Market Street, Tuesday evening, March 3, 1891; President Reed in the chair, Secretary Andrews at the secretary's desk. For the first time in the history of the club every active member responded to the roll call. President Reed rendered his annual report, which was replete with suggestions to the club to purchase a complete portrait outfit, the arranging for a series of field-days, and a legitimate expenditure of the club's funds, so as to provide the new rooms with every convenience that will afford the experimental amateur photographer facilities for pursuing his work. Secretary Andrew's report elicited the information that the club membership was 177, with but six resignations and two deaths during the year. Applications for membership on hand awaiting the action of the new board, 48. Money collected during the year, \$1,843.95, expended \$1,344.75, leaving a balance on hand of \$499.20, with nearly \$1,000 still owing the club. The club gave three public demonstrations during the year, and several public exhibitions. The cost of these exhibitions averaged \$100 apiece. The election of the Board of Directors for the ensuing year was next in order and resulted as follows: President, Geo. W. Reed (re-elected); 1st Vice-President, H. B. Hosmer (re-elected); 2d Vice-President, E. P. Gray; Secretary, T. P. Andrews (re-elected); Treasurer, E. J. Molera (re-elected); Corresponding Secretary, E. L. Gifford; Librarian, H. C. Tibbitts; Theo. C. Morceau (re-elected); H. C. Owens, C. J. Wetmore (re-elected), A. G. McFarland.

"A Dry Emulsion, Sensitometer No. 62," the illustrated poetical satire upon the club's prominent members was shown upon the screen. Mr. Gifford, the author of this pleasing joke, read the poem. This proved a huge and pleasant surprise to the members and their friends present, and was highly appreciated. Following this a batch of miscellaneous slides from various members were shown upon the screen. Following this the club members were invited to partake of a sumptuous repast, with the compliments of the new Board of Directors. The meeting then resolved itself into a smoking concert, during which the club were highly entertained by Mr. West, the famous banjo soloist, with an original song dedicated to the club; by Mr. Hirsch, the popular zither soloist, and by Mr. Bornemann and his little tin whistle. The entertainment was highly pleasing, and it is proposed by the club to hold a smoking concert once in two months. Mr. W. B. Lee, of the Boston Camera Club, and E. P. Gray, of the Amateur Photographic Society, New York, participated in the proceedings.

The Postal Photographic Club.—In looking over the contents of the February *Album* of this club, which has just been received, and comparing it with that of the two *Albums* preceding, we must confess it is not quite up to its usual high standard; although there are undoubtedly some very good things in it. Especially so are the three interior studies, by Miss Johnston (a new member), which are indeed excellent and defy criticism. Mr. Prentiss also gives us a charming thing in "Grandmother's Bonnet," and on the front page of the *Album* is a photo of the beautiful statue, "Youth as a Butterfly," by Mr. Graves, who is noted in the club for his fine technical work, and from whom we have

also further on a fine Adirondack view. Miss Eddy and Miss Clarkson also supply us with some very artistic studies, in the former's excellent composition "After Dinner," and the latter's figure study, "Elaine." From Dr. Strout we have a fine "Winter Landscape," and Mr. Le Breton again favors us with the second in his "Types of American Women," besides giving us a fine California view, and a very good reproduction from the noted painting "Maternity," by Bongereau. We also notice in this *Album* the study "In the Lane," by Mrs. Appleton, which was lately reproduced in this magazine. Dr. Mueller, in addition to some landscape and portrait work, sends the club a photo of the arm chair they presented to him last Christmas, in token of their appreciation of his untiring services in their behalf as secretary of the club. Among the many other prints exhibited in this *Album* (for there are seventy-eight in all), we fail to find any from Mr. Hansmann, whose fine platinum prints usually add so much to its pages and which we trust to see again in the next *Album*.

The Photographic Society of Philadelphia.—At the regular meeting on March 11, 1891, Mr. John G. Bullock presided. Reports of the success of the lantern-slide exhibition held at Association Hall were presented. The subject discussed was "Dark Room Illumination." A light shielded from the eyes and shooting downward directly onto the tray was recommended, also locating the lamp outside of the dark-room. Mr. Carbutt preferred a cherry fabric lamp arranged to hold a candle inside for traveling, as a candle could be bought anywhere. Mr. Rau had used ruby paper rolled on a stick, which he slipped off and placed over a candle on top of a box cover. A new magnesium light diffuser was exhibited. Mr. Earl showed a Dubroni wet-plate camera and dark-room combined, which was quite a compact affair for outdoor work in the old wet days. Each time a plate is developed the bath vessel has to be carefully cleaned out.

The Chicago Lantern-Slide Club.—On March 19th the annual meeting of the club was held, resulting in the election of Lieut. C. P. Stivers as President, and W. A. Morse as Secretary. Members of the club have contributed slides to be sent to Australia in exchange for Australian views.

The Adrian Camera Club.—At the annual meeting held in February the following officers were elected: F. B. Stebbins, President; W. T. Barnum, Vice-President; E. J. Stebbins, Secretary; Walter Graves, Treasurer.

Photographic Section of the Brooklyn Institute.—The regular meeting was held on March 9th, President Black in the chair. Professor T. Lee Boyle lectured on "Photography in Its Relation to Art." He thought it very necessary to have artistic knowledge if the fascinating art-science was to be used to its fullest advantage. At the April meeting Mr. J. Wells Champney is to lecture on "Selection and Rejection," to be illustrated by lantern slides.

The American Lantern Slide Interchange.—In accordance with the rules the annual election of the executive committee for 1891 took place in March resulting as follows: F. C. Beach, Manager; Wm. H. Rau, of Philadelphia, and G. Hunter Bartlett, of Buffalo, N. Y., as assistants. The Brooklyn Society of Amateur Photographers, the Hoboken Camera Club, the Albany Camera Club, and Worcester Lantern Slide Club have applied for membership in the Interchange. It has been voted to amend the rules by postponing the time for sending in slides from October 15th to November 15th of each year, also to allow the traveling expenses of members of the committee attending the annual test examination meetings to be paid out of the general fund. The sentiment of the association is unfavorable to the merging of the Interchange with the American Photographic Conference.

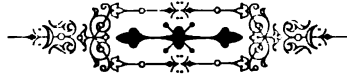
Syracuse Camera Club.—This club gave their annual public exhibition of lantern slides, of work of their own members, on Monday evening, March 23d, at the Wieting Opera House. One hundred and seventy-five slides of different subjects, views of animals, and many artistic landscapes, composed the collection. A large audience was present and greatly enjoyed the work. A neat programme with a picture of an old water-wheel and mill on the outside, was given out as a souvenir of the event.

The Boston Camera Club.—The regular monthly exhibition of the club was opened on the evening of the 6th, and while not, strictly speaking, an exhibit of individual work, is one of the best which the club has had for some time. Mr. H. N. Sweet, the president of

the club, furnished nearly one hundred photographs, the result of his work some three years ago as photographer of a scientific exploration party in Yucatan. The pictures are well worthy of being classed with professional work, and twelve large bromide enlargements from $6\frac{1}{2} \times 8\frac{1}{2}$ negatives come out nearly as sharp as direct contact prints. Every one who has attempted the photography of old inscriptions on stone knows the difficulty of such work, and in some specimens shown to illustrate the carvings on the old temples, Mr. Sweet has produced wonderfully good results. Then there are about one hundred professional photographs illustrating the country and habits of the people of India, loaned by Mr. George D. Davis, who lived some years in that country. One of these, a view of the section of the Kootub Minor, a tall tower, is a curiosity, photographically speaking. The section shown is some distance above the ground, and in order to bring out the letters, for the tower contains the whole Koran engraved upon it, the camera was placed far away and a telescope attached to the lens. The mountain views of the Hymalayas are also worthy of note. Some thirty pictures are also shown by Mr. Walter G. Chase, and for a small collection show considerable variety. The pictures taken among the Shaker community could well be taken for copies of the old Dutch Masters. A portrait of W. D. Howells is also shown.

The entertainment at Union Hall, Monday, March 30th, was a success in every way, and netted the club a goodly sum.

At the regular monthly meeting of April 6th it was voted that women be admitted to full membership.



"*Index Rerum Photographic*," by Dr. John H. Janeway, U. S. A., continued from page 130

heat indicated a gradual rise of temperature in the red end of the spectrum, the most powerful being beyond the visual rays. Wall gives the following table in his Dictionary as giving the values of the colors of the spectrum as heat producers: Taking 100 as the maximum intensity of heat rays, violet 0, green 2, yellow 14, red 21, end of visual spectrum 45, ultra-red or invisible rays 100.

CALOTYPE (from Grk. *καλός*, beautiful)—A process invented by Fox Talbot, and frequently called after him, especially in this country; not much used now. Consisted of coating a good, stout, even-surfaced paper with a solution of nitrate of silver and iodide of potash, and to which is further added a solution of iodide of potash, until the precipitate formed in the first solution is redissolved, and then applied by a Buckle's brush, after which the paper is placed in a flat dish of clean water, and changed several times to free it from the iodide of potash. The paper is then hung up to dry. Light does not affect it. To excite it for the camera, it is treated with a mixture of aceto-gallio-nitrate of silver, composed as follows: Sol. A: Nitrate of silver, 50 grains; distilled water, 1 oz.; acetic acid, 80 drops. Sol. B: Gallic acid, 10 grains; distilled water, 2 oz. Take 2 drams of distilled water, 6 drops of solution A, and 6 drops of solution B. This quantity is sufficient for two sheets $6\frac{1}{2} \times 8\frac{1}{2}$. Brush over evenly. Leave for half a minute, then blot with clean blotter, and place in the holder. Time of exposure, subject to amount of light, was four to five minutes. To develop, about 40 drops of each solution were required for two pictures. It (the picture) was visible beyond a pink sky. Solution B was used first, being applied by a brush when the development was nearly completed. Solution A was finally used to finish. Wash in three waters, and clear in a hypo solution, 1-20, well washed in three waters till free from the yellow iodide of silver, and then hung up to dry. Prints were made from these in the usual manner of printing from paper negatives.

CAMEO PHOTOGRAPHS—Of shapes varying from the circle to the oval, and to which a slight convexity is given by means of dies and presses.

CAMERA—The evolution of the camera from the plain box of 1845 to the nearly perfect one of the present day is one of interest, but a *resumé* of it is too long to be introduced here. Several of the magazines of this year (1890) have full accounts of it. They are made of various sizes and for different purposes: the portrait, for studio work; copying, for enlarging and reducing; the outdoor,

for landscape, etc. ; and the hand camera, badly called the detective, etc. The camera for outdoor work should be of light weight, yet substantially made, containing no loose parts, quickly and easily set up—a rising front, with movable lens board, reversible backs, swing back, and absolutely light-tight.

CAMERA LUCIDA—An instrument which, by means of a prism of peculiar form or arrangement of mirrors, gives by reflection a picture which may be thrown down on paper or canvas, and conveniently traced with a pencil. Invented by Dr. Wollaston in 1804, improved by Amici.

CAMERA ÒBSCURA—Dark Chamber—Is, as its name implies, a closed space impervious to light. There is, however, a small aperture in which a double convex lens is placed, which allows luminous rays to enter, and form on the opposite side an image of the object in its natural colors. Porta, a Neapolitan physician, the inventor, found that, by placing a white screen in the focus, the image was much brighter and more definite. In the usual form of the camera obscura, the image is received upon a glass mirror, which is inclined at an angle of 45° , and reflected to a screen of ground glass, upon which a piece of tracing paper is laid, and a drawing of the image readily made.

CAMERA STAND—For studio and indoor work, various devices have been contrived to support the camera and to allow of its easy manipulation. For outdoor work the stand consists of three legs, detached, but quickly joined to the camera, called the tripod—which see.

CAMPHOR— $C_{10}H_{16}O_2 = 152$ —Obtained from the wood of the camphor laurel, a tree growing in China and Japan, by steaming. A white, colorless, crystalline solid, of penetrating odor, only slightly soluble in water, but soluble in alcohol, ether and turpentine ; difficult to powder unless mixed with some one of its solvents. It is used as a preservative, to prevent gelatine and albumen, etc., from becoming mouldy, and to keep off the attacks of insects. Camphor, dissolved in turpentine and mixed with a little emery, is useful in grinding glass stoppers to secure a perfect fit, and, in fact, for grinding glass for any purpose. A small lump, introduced into an oil lamp of a magic lantern, increases both the brilliancy and whiteness of the light.

CANADA BALSAM—A resinous substance, containing so much essential oil as to cause it to be soft and viscous ; in other words, a natural varnish, procured by incising the bark of the *Pinus balsamina*. ∇

is much used by the opticians in cementing lenses. It sometimes turns yellow, and again, cracks and shows the colors of thin plates, producing an appearance of damage to the lens itself. Should either occur, the lens should be removed from its mount and soaked in turpentine (warm), which will dissolve the cement. The yellowish hue of the ordinary Canada balsam can be removed by exposing the balsam to sunlight in white glass bottles. It is frequently used, dissolved in benzole, to render paper translucent.

CANVAS, PRINTING ON—Best done by enlarging. The canvas should be well washed with soap and hot water until all greasy marks disappear, then rinse well under a tap and apply a hot, thin solution of gelatine, and afterward sensitized as for paper. Of course it is unnecessary to gelatinize and sensitize the whole of the canvas.

CAOUTCHOUC—India Rubber—Is the solidified juice which exudes from certain tropical plants. Protected from air and light—being kept in water and in the dark it undergoes no change—but otherwise it absorbs oxygen from the air, and in the course of a few months becomes inelastic and rotten. When freshly cut the edges adhere firmly when brought into contact, and it is therefore valuable for tubing, etc., in the laboratory. It is freely soluble in washed ether, chloroform, carbon bisulphide, coal naphtha, and rectified oil of turpentine; insoluble in alcohol. Vulcanized India rubber is prepared by heating the gum in 2 or 3 p. c. of sulphur. Ebonite is prepared by heating the gum in from 12 to 15 p. c. of sulphur.

CAP—The cover furnished with the lens for its protection against accidents, dust and continued light. Some persons prefer to have caps for both ends. It is also used to open and close the lens at the time of exposure.

CARBOLIC ACID— $C_6H_5O = 94$ —The principal source from which it is derived is coal tar. When purified it crystallizes in colorless needle shape, and melts at 102° F. Soluble in water, and more so in alcohol, ether and acetic acid. Though called an acid, it does not red-den litmus. Largely used as a preservative from fermentation and putrefaction, and as a disinfectant. Its action seems to be due to its power of coagulating albumen. A few drops in water only are required to prevent decay, mould, etc., to albumen, gum, etc. Carbolic soap, much used, contains from 5 to 20 p. c. of the acid.

CARBON— $C = 12$ —Found free in Nature—As graphite, called black lead or plumbago. In crystalline form in the diamond coal. All organic compounds contain carbon. Coke, charcoal and bone black are obtained by heating coal, wood or bones in a retort; the gases being

driven off, they are left behind. Lamp black is a finely divided form of carbon, deposited from burning oil or tallow. Carbon has never been dissolved or melted, and the amorphous carbon or charcoal has great powers in absorbing and condensing gases and retaining the coloring matter of liquids passing through it.

CARBONIC ACID GAS— $C O_2$ — 44—See Acids.

CARBON PROCESS—Of all the materials known to chemistry, carbon is one of the most constant and resistant to the influences of temperature and the hygrometric changes of the atmosphere, and therefore carbon prints are considered to be the most permanent. In 1855, Poitevin discovered that the action of light on gummy or mucilaginous matters, mixed with alkaline or earthy bichromatés, rendered them insoluble even in warm water. It then occurred to him, for the purpose of producing photographs, to add some insoluble coloring matter, such as carbon or powdered enamels, to gelatine, albumen, gum arabic, sugar, starch, etc. A fine coating of the bichromatized gelatine was mixed with carbon and spread over a leaf of paper exposed to the light through a negative. The paper was then washed in tepid water, the parts of the paper unaffected by the light were dissolved, while those parts which had been rendered insoluble by the action of the light remained adhering to the surface, and the picture appeared formed by the insoluble parts of the mucilage. Poitevin published this more as a curiosity than a practical method. After this, many others were not long in conceiving similar processes to his, all of them more or less perfect. Swan gave, in 1864, a vigorous new start to the art in carbon photography by his curious process. After his improvements, great strides and admirable results have been arrived at. According to the nature of the permanent and solid substances which are incorporated with the gelatine, the glazed tissue can be toned black, like an engraving, purple or sepia color. As many valuable treatises and manuals of practical instruction have been published on this process, especially that by Max Bolte, in *Anthony's Bulletin*, 1887 (which for its plainness is worthy of consultation for all the necessary information), a description of the process, which is long, will not be given here. A novel carbon process has just been announced, which appears to be easy to carry out, and requires no reversal of the negative, and is said to produce permanent prints. Make a solution of gelatine 1-60, and draw sheets of good, strong paper through it; hang it up to dry; wet it again and squeeze it down on a piece of glass. Now brush over it a solution of 10 parts of gelatine, 10 parts gum arabic, 20 parts white sugar, 80 parts distilled water.

When still quite moist put it in a dusting box (such as used for photogravure) which contains a mixture of 100 parts of dry white sugar and 5 parts of French lamp black. After a lapse of 8 to 10 minutes withdraw it, and it will be found to be covered with innumerable particles of dust. Paper thus prepared will keep, and has to be sensitized in a bath of 50 parts bichromate of potassium, 50 parts of bichromate of ammonia, 6,000 parts water, and aqua ammonia until it assumes a light yellow color, and at last, to avoid too quick dissolution of the gum arabic, immerse in 20 parts chromic acid in 1,500 alcohol. Print by Vogel's photometer, 16° to 18° . To develop, use warm water first and afterward cold, leaving the print for several hours in water, to which may be added a little aqua ammonia in case the printing has been carried too far. The prints show a singular and very pleasing grain, and need no transferring.

CARBONATE OF SILVER—See Silver.

CARDS AND CARDBOARD—Stiff paper, or specially prepared pasteboard, upon which to mount the prints. Care should be exercised in the selection of this article, for it oftentimes contains materials injurious to the life of the print, such as hypo, partly decomposed paste, strawboard inside, etc. The colors, also, are sometimes objectionable, acting on the burnisher, marron especially. Use the best, not the cheapest. Test for the durability of the color by cutting a slip off the card and immersing it in warm water in a test tube. After a few minutes hold the tube to the light and see whether any of the color bleeds out. If it should, it is of course unfit for use. To note the presence of injurious chemicals, take a lightly printed and well washed photograph, cut it in pieces and mount on the trial card, against others whose purity is known. Wrap them all up together between successive folds of wet blotting paper, and put the parcel away for a day or two in a tin box. When opened, should any signs of fading be apparent, the operator can draw his own conclusions.

CARTE DE VISITE—Photographic pictures, commonly called cards, measuring $2\frac{1}{2} \times 4\frac{1}{8}$ inches.

CASTOR OIL—A viscid oil, obtained either by roasting or expressing the seeds of the *Ricinus communis*. It slowly hardens by long exposure, but does not solidify even at zero F. Soluble in alcohol. When mixed in small quantity with collodion, it toughens the film and renders it more easy to transfer from the glass plate to some other support. Also toughens varnish. Used, also, to render paper translucent, paper negatives, etc.

CAUSTIC ALKALIES, DETERIORATION OF—It should be remembered that when exposed to the air, the caustic forms of soda and potash are

capable not only of absorbing moisture from the air, but also carbonic acid, thus gradually converting them into carbonates, and causing them to lose considerable of their power. Ammonia, unless thoroughly sealed against the action of the atmosphere, loses strength in a double way—first, by evaporation; second, by neutralization.

CAVERNS, PHOTOGRAPHY OF—It is said that the following mixture will give a penetrating light, visible in clear weather at a distance of nearly 4,000 feet, and having an illuminating power of 20,000 candles, and therefore capable of lighting long, dark spaces, caverns, etc. Powdered magnesium, 20 parts; nitrate of barium, 30 parts; flowers of sulphur, 4 parts; beef fat, 7 parts. The fat is added in the melted state, and the mixture allowed to cool in zinc boxes, $3\frac{1}{2}$ inches high and 7 inches in diameter.

CELLOIDIN PAPER—The new chloride of silver celloidin paper of Dr. Kurz Weringerode differs essentially from all others of similar products. This paper has a faintly glossy, almost matt surface, so that one might believe that it could give no print to resemble the gloss of albumen paper. The finished prints have a gloss as fine as any "Brilliant" paper. The film possesses a strong resistance, is thin and hard, and the paper can be dried between blotting paper or by artificial heat. The treatment is extremely simple. The printing is done in the ordinary way, but so deep that the shadows show a bronze tone. The sensitiveness is very great. The negatives should not be weak, but just be in the same condition as for albumen paper. A negative that gives satisfactory prints on albumen paper will do the same thing on celloidin. This is a great advantage, as all chloride of silver paper heretofore known printed more or less hard. The pictures come directly into the toning bath from the frame. The bath is composed as follows: Hypo, 500 grammes; ammonium sulpho-cyanide, 55 grammes; alum, 15 grammes; chloride of gold, 1-200, 225 c. c.; acetate of lead, 20 grammes; water, 2,000 c. c. The clearing and toning last about eight minutes, giving a magnificent purple tone, with the high lights brilliantly white. The tone does not change much during drying, and the toning has to be continued until the desired color is obtained. They curl a little toward the film side, and therefore require a sufficient quantity of solution. Many pictures can be toned at the same time. The washing is much quicker than with the gelatino-chloride of silver paper. Must be mounted while still in the moist state. The formula has not yet been published.

CELLULOID OR XYLONITE—Is a compound similar to pyroxylin—formed
(To be continued.)

BOOKS AND EXCHANGES.

TYLAR'S CATALOGUE.—We have received from Walter Tylar, of London, a very voluminous illustrated catalogue, of over 300 pages, on lanterns and lantern slides. It contains useful directions about the arrangement of condensers and lenses, and the care of the lime light and how to work it.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

MR. JAMES H. STEBBINS, JR., President of the New York Amateur Society, and well known for his chemical researches, has perfected a simple single solution intensifier and reducer, which works very satisfactorily. They are put up in dry form so that it is only necessary to empty the contents of a box into a certain quantity of water, to have the solution ready for use.

A PHOTOGRAPHIC LENS AND SHUTTER PRIZE CONTEST.—*The Bausch and Lomb Optical Company*, of Rochester, N. Y., are devising a plan by which different amateur societies or clubs can obtain not only a first class lens and shutter, but also a cash prize for the best work done with a lens and shutter of their make. It is proposed, provided a sufficient number of members from each club will agree to act as contestants, to open a prize contest. Either a Universal or an Alvan Clark lens with a Bausch & Lomb Diaphragm shutter attached, is to be sent to the officers of such clubs as apply, the latter to select a committee to care for and keep track of the lens; loaning it to each member of the club willing to enter the contest. The committee will act as judges for the club, and decide as to the first and second prize. After the distribution of prizes in each club all of the negatives are to be sent to a committee of judges, to be appointed by the company, who will decide from the whole collection as to which club is entitled to the third, fourth, and fifth prizes. Contestants may send one, or more, negatives. No one shall be permitted to accompany a contestant who has competed as professional, or is a professional. The prizes proposed are as follows: *First prize*—A Universal or Clark lens with diaphragm shutter attached for $6\frac{1}{2} \times 8\frac{1}{2}$ inch plate. *Second prize*—A diaphragm shutter not over $1\frac{1}{2}$ inch opening, or its equivalent in value. These are for the members in each club producing the best and next best results in instantaneous photography, with the lens and shutter. *Third prize*—\$200, to the contestant producing the best results in instantaneous photography, from all the clubs combined. *Fourth prize*—\$100, to the contestant producing the next best results in instantaneous photography, from all the clubs combined. *Fifth prize*—\$200, to the club producing the best average results.

Preference is given to the $6\frac{1}{2} \times 8\frac{1}{2}$ plate, though the 5×8 size is to be allowed. The negatives submitted are to become the property of the Company. The contest is to open May 1st and to close August 15th, next. It seems to be a practical scheme to get amateurs to try a good shutter. The foregoing is an outline of what is suggested. Detailed circulars are soon to be issued.

United States Photographic Patents

Issued in March, 1891.

MARCH 3d.

447,845—Solar Reflecting Camera. R. N. Reed, Covington, Ky.

MARCH 10th.

447,815—Sample or Picture Exhibitor. H. Frercks, Chicago, Ill.

447,902—Camera Shutter. L. Prosch, Jr., Brooklyn, N. Y.

20,568—*Design Patent* Album. L. A. Lipman, Brooklyn, N. Y.

MARCH 17th.

448,364—Photographic Film. V. Planchon, Boulogne, France.

448,383—Photographic Plate Washing Apparatus. T. W. Taylor, Brooklyn, N. Y.

448,447—Photographic Copying Apparatus. S. C. Madsen, Sleepy Eye Lake, Minn.

MARCH 24th.

448,692—Implement for Mounting Pictures on Glass. R. H. L. Talcott, Boston, Mass.

448,801—Photographic Roll Holder. H. G. Ramsperger, New York.

448,825—Dissolving Shutter for Magic Lanterns. J. Shannon, Wixom, Mich.

MARCH 31st.

449,386—Magic Lantern. F. Sheidig, New York.

449,391—Burnisher. S. O. Tuerk, Syracuse, New York.

449,487—Portable Dark-Room. J. H. Markley, Brooklyn, N. Y.





THE SHERMAN FUNERAL CORTEGE, ST. LOUIS.

BY R. E. W. BAIN.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III

BOSTON, MASS., MAY, 1891.

Our Illustration.

PICTURES of processions are seldom interesting, but Mr. L. B. Bain's instantaneous photograph of the funeral procession carrying the remains of General Tecumseh Sherman, taken on February 21, 1891, is historically interesting. The procession was passing the remains, passing around the corner from Grand Avenue to City Street, it was two o'clock in the afternoon, and the Editor of the Boston Herald says the escort was the Ransom Post, G. A. R. The procession, though not General Sherman's, carried, however, his baggage, equipments, etc. The view was made on a Cramer C plate, with a No. 6, diaphragm f=16. It is well located on the plate, and gives a unique instantaneous view.

Modern Methods of Illustration.

BY W. H. BURBANK.

COLLOTYPE PRINTING FOR AMATEUR WORKERS.

AS THESE rambling papers are intended more especially for the amateur worker who desires to produce his prints as expeditiously and economically as possible, I have thought it best to describe a method of colotype or phototype printing by means of a simple and inexpensive machine, of French origin, called the "Autocopiste," and mentioned in "English Notes" in our April number. The method has recently been brought to the attention of English workers by Mr. Leon Warnerke, and having used one at intervals for the last year, I am prepared to recommend it as suitable to the needs of the amateur.

The machine itself is nothing more than a stout wooden frame provided with suitable arrangements for stretching and clamping the sheet of gelatinized parchment paper which forms the printing surface. This paper comes in rolls and can be had in this country, as well as the "Autocopiste," itself. The paper is cut to size a few inches larger than the finished picture, and is sensitized by immersion in a three per cent solution of bichromate of



THE SADDLEBACK FURNACE, ON A HILL, 1911.

Dr. R. F. M. DAVIS.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

BOSTON, MASS., MAY, 1891.

No. 5.

Our Illustration.

PICTURES of processions are seldom interesting; but Mr. R. E. M. Bain's instantaneous photograph of the funeral procession accompanying the remains of General Tecumseh Sherman, at St. Louis, Mo., February 21, 1891, is historically interesting. The picture shows the caisson bearing the remains, passing around the corner from Grand Avenue to Pine Street; it was two o'clock in the afternoon, and the light was weak. Mr. Bain says the escort was the Ransom Post, G. A. R. The horse following, though not General Sherman's, carried, however, his trappings, accoutrements, etc. The view was made on a Cramer C plate, with a Steinheil lens No. 6, diaphragm f—16. It is well located on the plate and is altogether a unique instantaneous view.

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potash, to which sufficient ammonia has been added to impart a yellow color to the solution. This bath keeps well if protected from the action of light. The temperature of the bath should be about 60° Fahrenheit, and the length of immersion may vary from five to ten minutes. The longer period gives a more sensitive film and is recommended when dense negatives are to be printed from. The film is slowly withdrawn over the edge of the dish to remove the excess of solution, and hung up for a short time to drain slightly. It is then squeegeed down on a sheet of smooth glass well cleaned and polished with talc, and dried in the dark. The film is not sensitive when wet, so that the sensitizing may be done in white light. The only special precaution needed in the sensitizing is to avoid air bells. The paper will dry in six or eight hours, and when dry the sheets are pulled from the glass and kept flat in a dark room. They can be used at once, but work better when from two to four days old.

The exposure is made in an ordinary printing frame, with a plate glass front, and large enough to take the sheet, the negative placed in the center. The exposure under a negative of medium density, and in full sunlight, will vary from three to five minutes, and should be prolonged until the brown image shows all the details. It is best to print in diffused light and give a longer exposure, always sufficient to show detail in the thick parts of the negative. The beginner's success will be promoted if he makes use only of soft and harmonious negatives. The printing frame should not be opened in a strong light when the image is to be examined.

When the image is well printed out, the tissue and the negative are removed from the frame, the tissue placed back down on the glass front, its face is covered with a piece of black velvet, the back of the printing frame placed in position and the tissue exposed to light, through the back, for about five minutes, or just long enough to tint it slightly. The object of this "sunning" of the back is to cement the gelatine film firmly to the paper and prevent "blistering" during subsequent manipulation.

The next step is to dissolve out all the unaltered bichromate by soaking the film for several hours in frequent changes of water. When the yellow color is entirely discharged, and not before, the tissue is removed from the tray, drained, blotted, and pinned by the four corners to a smooth board and dried. In order to prevent the curling up of the tissue as it dries, it may be squeegeed down on a talced sheet of glass, but this method prolongs the drying and is not necessary. When thoroughly dry, and better some hours after, the sheet is placed in a tray with a bottom slightly smaller than itself and covered with a mixture containing seventy parts of glycerine, thirty of water, and three of ammonia, which is allowed to act for an hour, to penetrate the sheet thoroughly. The tissue is then removed, the excess of solution wiped off with a soft linen cloth, when it is stretched on the frame of the "Autocopiste," following the directions furnished with the instrument.

An alternative method of treating the film, and one which I have worked successfully, is to drain it slightly when taken from the washing tray, and then to lay it face up on a sheet of glass, squeegeeing it into close contact; the glycerine solution given above is poured over the face of the film and partly drained off. The glass is then leveled and the film allowed to dry, being protected from dust by covering with a box cover. When the dried tissue is wanted for use it must be soaked as before. The object of this treatment is to toughen and harden the film, and the same solution must be dabbed on the tissue whenever the film seems to soften during the printing.

Full directions for printing accompany the machine, which comes in a neat wooden box, containing the stretching frame, a roll of the paper, inking rollers, ink, thinning varnish, inking plates, and everything necessary for working the process, except the printing press, which is nothing more than a common letter copying press. Unfortunately the book of instruction is written in French, and as many of my readers may not be familiar with that language, and may wish to purchase the outfit, I give a free rendering of the directions for inking up and printing.

The ink furnished with the instrument is too thick for use and must be thinned down with the varnish contained in the collapsible tube, which is nothing more than the middle varnish of the lithographic printer. For general landscape or portrait work two inks of differing degrees of fluidity are necessary, the thicker for the first inking of the main features of the image, and the thinner for the half-tones. This second ink may well be a different tone from the first, which should generally be a black, while the other approaches more nearly the photographic warm tone.

The ink for the first inking-up is made by taking three parts of stiff litho-ink and two parts of middle varnish. These are thoroughly mixed on the inking slab with a palette knife, and then distributed over the plate with one of the rollers. The second ink is made by adding two parts of varnish to one part of the stiff ink and distributing it on a second slab. Care should be taken to have only a thin, even coating of ink, and in order to make sure of this it is well to provide two 10 by 12 pieces of ground glass, and use these for supplying the rollers with ink for the actual inking up, the first slabs being used only as feeders. It is important that the rollers be only thinly coated with ink. To ink the image the roller, covered with the thick ink, is passed slowly over the parchment in all directions, using a fair degree of pressure, until the image is well inked in all parts; continue rolling, but with a lighter touch, until the whites seem to clear up. Next, in order to bring out the half-tones, the second roller, charged with the thin ink, is rolled quickly and lightly over the image, when, if all is right, a well inked image will show on the parchment. The printing paper is now placed on the image, above this is placed a sheet of bristol-board, and last, one or two sheets of blotting paper. The frame is then placed in the press and the pressure applied, and

allowed to "dwell" for a second or two. The pressure must be sufficiently strong to remove all the ink from the image.

One or two other points regarding inking up are worth mentioning in order to make this part of my subject as complete as it can well be made in writing. The golden rule in inking is that a slow and heavy motion of the roller deposits ink, while a quick and light motion removes it. Again, the surface of the parchment plate will take stiff ink only where it has been strongly impressed by light; that is, in the shadows. The rest of the image will take up a thinner ink. Hence by using inks of different thickness, the shadows can be reinforced to any extent without injuring the half-tones, which are brought out by subsequent rolling with thin ink. A grained leather roller, such as litho-printers use, is rather better for the stiff ink than the composition furnished with the apparatus, but the beginner will get on quite well with the latter, for a time at least.

The first rolling usually takes considerable time, and the first ten or twelve "pulls" will not be very satisfactory, but after these are taken off the plate should be in good working order, and from thirty to fifty impressions can be taken before it is necessary to dampen the plate with the glycerine solution, which is sponged over the image with a soft sponge, all surface moisture being taken off by dabbing with a soft linen cloth. The unimpressed portions of the image, the sky for instance, must always be sufficiently moist to repel the ink, but not damp enough to cause the roller to slip. If it is desired to make prints on paper larger than the image on the parchment, thin paper masks must be provided, with a central opening the size of the picture. One of these is fastened to one side or end of the parchment with gummed paper. The mask is turned back when the image is inked up, and laid down on the film before the printing paper is applied.

Such is in brief the description of a method of collotype printing, which seems to have much to recommend it to amateurs, and by which, with a modicum of skill and practice, very satisfactory work can be turned out at a small initial outlay for the plant. I have made the description as full and plain as possible, but if any of my readers are tempted to try the method and meet with difficulties not "in the writing," I shall be pleased to do my best to help them over the hard place personally or by letter.

Clouds.

HERE was a time, happily long since passed away, when a blank white sky in a photograph was looked upon favorably as evincing careful manipulation. We have seen photographs of this type in which the composition of the view was faultless, yet the sky was a complete blank giving an effect of incompleteness truly aggravating and destroying completely all the harmony of the picture. A careful study of paintings, etch-

ings, and other works of art reveals the fact that the sky has received quite as much attention as the rest of the picture and the result is more or less pleasing. In making a negative we have a limit placed on the rendering of cloud effects by the very nature of the light itself. The eye in looking at a landscape is not affected by the actinic power but by the luminosity, consequently we see the form, light, shade, and color in their true relation to each other. With the sensitive plate, however, all this is changed; here the effect is produced by the actinic rays only, or, as we may express it, the eye sees the usual and the plate the actinic rays. Let us see how this acts. The vast volume of light from the sky is full of actinic power and impresses itself most powerfully on the sensitive film which, on development, shows great intensity in that portion, so that in a print it would be rendered by a comparatively white space. In fact the darkest part of a cloud will reflect more actinic light than the brightest part of the landscape, while its *value* may be no greater or even as great.

This has long been recognized and various methods have been devised to cut off the superfluous light from the sky; among these using a sky shade in front of the lens or having stops made with openings placed diagonally in the lens mount so as to present a full opening to the foreground and gradually cutting off the light from the sky. Both of these appliances work well in special cases but do not completely fill all requirements. So-called instantaneous exposures will, when clouds are well marked and the view brilliantly illuminated, produce good and true effects, but such are not always possible except in seascapes; hence we must look for some other method whereby we can introduce pleasing and natural cloud effects in our pictures. This can only be done satisfactorily by double printing. Of course it may be claimed that a constantly recurring cloud effect is monotonous, and to avoid this it is essential to have a large assortment of cloud negatives from which selections can be made best suited to the view. To make variety it is sometimes desirable to simply shade the sky in printing in such a way as to produce the highest light at the horizon and gradually darkening towards the zenith. This in a view having a long stretch of distance heightens the atmospheric effect and helps the perspective.

Cloud negatives are best made on orthochromatic plates, through a color screen; since the white clouds on the blue ground will be rendered in their true values. In making such negatives it is inadvisable to select very pronounced effects, but rather quiet and harmonious arrangements. Especial care should be taken in the lighting, observing in each case the position of the sun and only making such as are lighted in a way to be useful when printed in a landscape, for it is an inexorable rule that the cloud and landscape must be lighted from the same direction. Ordinarily two or three cloud negatives illuminated from each of the following five points will be found amply sufficient for ordinary work. These points are from the right,

the left, directly behind the observer, overhead, and directly facing the sun. Do not, however, limit the stock to these, but *never lose an opportunity* for securing a good cloud effect; the more the better. Probably the best plan is to make two negatives of a view when the cloud effects are particularly fine; one exposed for the landscape and the other for the clouds. By careful printing the most exquisite effects are produced and true to nature. Mr. H. P. Robinson was an early advocate of this method and a study of his work shows how successfully he has carried it out. It may be urged that this is an expensive and bothersome method, but we say in answer: far better make six good pictures from twelve plates than twelve pictures of doubtful merit.

It is the haste and want of deliberation that militates against successful work. Time, care, and study spent on a picture will tell powerfully in the end. One word on the depth to which clouds should be printed. To us the most pleasing effect is produced when the deepest shadows of the clouds are distinctly visible and the outlines just discernible, this gives more of a suggestion and is, we think, truer to nature. In looking at a sun-lit landscape with clouds the eye does not at once take cognizance of the clouds but rather the landscape, thus subordinating the clouds to the general effect. In fact making them an accessory. Hence, in a photograph the printed-in sky should produce the same effect on the beholder, that is the view claiming first attention and the clouds next. Where clouds are printed deeply this effect is just reversed and is unnatural. The exception to this is in the case of sunset effects; here the sky is the important subject and the landscape must be secondary.—*C. R. Pancoast in the Connecticut Guardsman.*

Photography as a Profession for Women.

BY MISS CATHERINE WEED BARNES.

[Read before the Woman's Industrial Union, Syracuse, N. Y., March 30, 1891.]

MY TALK to-night will be a very plain, practical one, and I will try to set clearly before you the advantages of this work as a means of wage earning. No profession can be thoroughly learned without labor, and it is growing more and more necessary to do a thing well to win recognition in the close struggle and competition of our busy life of to-day. People demand the worth of their money more than they ever did, and those who furnish poor work never will win lasting success.

In Wilson's "Photographic Mosaics" for 1891, I strongly advocated women taking up this work as a business, for it seems specially adapted to those who are willing to undergo the needful training.

I am, of course, an amateur, that is to say one who does not pursue photography as a means of livelihood, but I have tried to study as if this work was to be my regular profession. "Whatever is worth doing at all is

worth doing well," was told me often when a child, and it is specially good that women should remember it, for they are not usually taught, as men are, to work systematically and thoroughly. Men have so long held the most advantageous place in the various professions, simply because they are expected to make a business and not a pastime of what they undertake. Their success is not caused by the size of the masculine brain or the amount of gray matter in it, but is largely the result of their training, and if women will go through the same hard work, not expecting any royal road to learning because they are women, and fitting themselves to stand the same tests as their brothers, they will deserve and win the same rewards. It is not by saying that women ought to have admission to any trade or profession, that its doors will open to her, but by her quietly and steadily proving her ability to do the work well. Once show you can do anything well, ignoring the question of sex by never obtruding it, but at the same time always respect your womanhood, while you firmly hold every advantage gained, and the respect of men, whose respect is worth having, will be yours. Women must learn, however, to take as sharp criticism as men have to do. They have no right to special consideration beyond the courtesy due from every man to every woman, but it should not be, on their part, all take and no give. I believe that every woman, like every man, in this country, should have some means of earning a living if obliged to do so.

Photography to me, while a source of great pleasure, has been no mere pastime, and, on any one who takes it up as a business, I would urge practical study of every part of the work from the beginning, although much of it you may never practice afterwards, but you will understand how to direct others, as you never could by merely reading or being told.

The camera, as used in the ordinary studio, is familiar to almost every one, but few understand the office of the lens, and it should be the first thing studied. Almost always, the exclamation uttered by those who see an image on the ground-glass of the camera for the first time is, "Why, it is upside down!" The explanation is simple. The eye is, in fact, a lens, differing from it, however, in one important particular. The image formed on the human retina falls on living nerves, not a flat, lifeless surface, and they correct what would otherwise be a reversed image. The lens has no such power, but it can collect the rays of light so as to receive on the sensitive plate (which replaces the ground-glass when all is ready for the picture) the reversed image which we, therefore, call a negative, but it would require a diagram to explain why the upside down becomes right side up. We get a positive, or in other words a finished picture, by placing sensitized paper or other substance back of the negative, and using day-light or artificial light to print through the latter.

Without going into details, fascinating as they are, I will only give those necessary to make my meaning clear, and then show you some examples of

women's work, by means of lantern-slides. Both negatives and slides in each case were made by women-members of the Society of Amateur Photographers of New York. Few professionals attempt these unless they make it a special business. Portrait operators have no time for the work, which is a branch in itself, requiring much care and judgment, besides artistic taste, and is entirely different from ordinary studio work. I advise all women who take up photography as a profession, to decide first, what special branch they will follow, and not try to cover the whole field. The latter course is very expensive.

With portrait work, if the studio is large, only one lens is needed, but that should be as fine as can be afforded. Economize wherever else you must, but you can do nothing if your lens is poor. In a short studio, you may need two or three to make up for lack of space. You can go to almost any lengths as regards expense in the matter of accessories, backgrounds, etc. In making interiors, it is well to have a large and a small wide-angle lens. Women who go into portrait work will learn a great deal of human nature, and find themselves daily called upon to exercise more than Job's patience. He was only obliged to endure, and could at least give vent to his feelings, while the photographic operator is forced to appear the soul of amiability, and, like the sun, smile on all alike. Even as an amateur, I have learned to feel for the professional, and can admire his patience when called upon to do the most absurd and unreasonable things at the sitter's pleasure. He must, if the sitter desire an almost immediate delivery of the finished print (which he generally does), bid the sunshine hold back clouds and rain, must correct with lightning touch all physical blemishes which unkind Nature has caused, and, in short, remedy each and every error which prevents the portrait being satisfactory. In this matter we women are supposed to be more particular than men, but I can testify that the facts do not bear out the supposition. People, generally, do not wish for an exact photograph, they want, not only to appear at their best, but often at some one else's best, as shown them in the gallery album, and insist on positions and costumes the skilled operator knows will not suit them when all is done.

In a professional gallery the man who poses sitters, generally develops the negatives, while the retouching is given to a second one, the printing and toning to a third, and the mounting and burnishing to a fourth. The amateur is expected to do all this himself. Retouching is very hard on the eyes, and should not be done by whoever does the posing and developing. In a studio everything must be reduced to a system. The public is generally satisfied if a photographer works on in a sort of a tread-mill as regards poses, etc., but there are sometimes sudden attacks which sweep over a community and render a certain pose or mode of printing fashionable. Then the professional who watches the great sea of public opinion, and comes in on the top wave, reaps a harvest, but the fashion often proves fleeting and

is swept aside by something else. Few sitters appreciate the care and thought and nervous strain requisite for a photographer to carry out a cherished ideal, and continue to think of picture making as only a magic trick, and not a genuine art worthy of years of study, as with painting, sculpture, or music.

I am now in communication with a young woman who has adopted this profession, and is succeeding because she is willing and anxious to learn. Besides carrying on her studio, she is taking regular instruction in one of the Chautauqua corresponding classes. She makes a specialty of women and children. The work is infinitely more refined and womanly than much which is eagerly sought after by women, and those who are determined to learn can, to a great extent, make their own future. No matter how many times you fail, keep at it, and you will succeed, providing you search every time for the reasons of failure, and do not let such occur again. In studying the development of negatives, a woman must learn to ignore the question of personal daintiness. Chemicals will stain, glass will cut, and rubber gloves are a nuisance only to be endured when the solutions are positively dangerous, as in sensitizing the tissue for carbon printing, when bichromate of potash is used. I would strongly advise starting with a course of elementary chemistry and practical experiments, and this part of the work, to me, is one of its most fascinating branches. Then one should understand the theory of light, its action and management, but much of this can be learned only through experience, and, as in posing sitters, this needs to be supported and inspired by keen artistic insight, which can be trained almost beyond belief, so that posing becomes largely a matter of instinct. Think, all the time, where improvement is possible in your instruments or manner of work, read constantly, and at first only simple manuals of instruction, experiment for yourself, and, being always ready to learn, do not let yourself be blown towards all points of the compass, like a weather-vane, by every wind of what seems to be information.

There is so much really to learn that one cannot afford to waste time. Photography is work in which one must keep informed as to the various discoveries being constantly made. Learning how to manage a camera, to focus, to develop a negative, and make an ordinary albumen print, is by no means all there is to photography. One's inventive faculty is stimulated by it in mechanics, chemistry, optics, and in art you learn to see what was once unobserved, and it is a good plan to mentally pose people in the street, in company, and at home, besides in the studio. Get in your pictures that quality which is called atmosphere, making your figures and heads appear to stand out from the background. Do not put your sitters very near the latter, and study every day the effect of different colors, draperies, materials for costumes, what will photograph well or ill, and do so under widely differing conditions of light. Remember, too, that the

seasons have an influence on your work, the strength or actinic power of light varies with them, and while the idea is pretty well exploded that absolute sunlight is requisite for portrait work, it is not usually known that the softest and most evenly-lit portraits can be taken during a rain or when snow has fallen. In the latter case, a short exposure must be given. The ordinary portrait plate-holder holds but one plate, and I prefer, when making a specially important picture, to use my ordinary view camera, but without the tripod for which the portrait lens is too heavy, and fastening it on a rising and falling stand, as it carries a double holder and I can thus have several plates in readiness. This often saves a good picture as the sitter has no time to get tired or you grow nervous, changing plates.

Camera work is hard work, but, to use a current Americanism, "it pays," and any woman who makes it a profession, must put herself into it, and her very best self at that. Emerson says, you will never bring back more from a journey, than you take away, and Joubert says, "You will find poetry nowhere, unless you bring it with you." So, in photography, you will get back all that you put into it of mental study, care and thought, but it will not give something for nothing.

ENGLISH NOTES.

BY THOMAS BOLAS.

The Camera Club Conference.—The difficulty in most photographic conferences and conventions is the absence of any special question or matter for discussion, so ordinarily the management has to resort to the expedient of gathering together any papers or communications which can be obtained, so that a so-called photographic conference becomes practically several ordinary meetings of a photographic society crowded into one long sitting. Thus on the second day of the two-days' conference, which was a sort of kernel in a week of exhibitioning and general festivity at the camera club, five papers were read, any one of which would, with its discussion, have formed full subject matter for an ordinary meeting of a photographic society. At an ordinary meeting the whole of the audience may be assumed to take some special interest in the announced subject, and to have come in order to hear about it; but when five subjects are to be brought up, many will have come from special interest in one paper only, and will take quite a secondary in the others. This was painfully apparent on the occasion referred to, when five excellent papers were almost wasted because crowded into one long meeting. The tension may be judged of when it is mentioned that, on the secretary constructing a complex and superfluous sentence in order to bring in and emphasize a word having a sound-resemblance to the name of one of the readers, there was a general wave of relief, although in ordinary cases a cultured English audience looks upon such a proceeding either as a personal

rudeness or a grammatical barbarism, only fit for the frequenters of a barber's saloon or a sporting club. The most important paper, that of Professor Minchin, on "Photo-Electricity," was practically lost on the audience, as it came after three others, and had to be much shortened, the details being so far omitted as to make it scarcely intelligible to those who had not specially studied the matter, while those who were specially interested scarcely gained anything because no reasonable time could be allowed for discussion or elucidation. The Professor, after summarizing the work of Becquerel and others, in devising cells which yield a current on exposure to light, described his own photo-electric battery, consisting of two tin plates, one etched or corroded, immersed in methyl alcohol. He explained how the current, given by a cell of this kind when exposed to light, can act on an emulsion plate (silver coated with Liverpool Emulsion) producing an effect analogous to that of light. The current can also, if relaid in a way he explained, by a double relay system, control an electric lamp, electric bell, or other apparatus, worked by a current, so that one might set a burglar alarm to become active when that personage brings up even the feeble light he is accustomed to work by. Professor Minchin also called attention to a momentary reverse current, arising when the liquid in a photo cell contains eosine, and this he attributed to the fluorescent property of eosine. Another point was the influence of ultra violet light in discharging negative electricity, and in connection with this, Captain Abney, who occupied the chair, suggested that recent results might make it worth while to very carefully repeat the experiments of Mrs. Somerville on the magnetizing action of the violet rays.

Mr. H. P. Robinson and the Proposed Photographic Institute.—Mr. Robinson has made a bold attempt to capture the Photographic Society, and presumably through it the proposed Photographic Institute, for those who consider photography more on the side of picture making than on the scientific or technical side, and if photography were nothing more than a pictorial art, all he says in his article (*Photographic News*, April 3d) would tell with full force. Mr. Robinson very properly and usefully protests against the spirit in which the last report of the Photographic Society was presented to the annual meeting, a report which, as Mr. Robinson says, "Graciously patronizing the art of photography, said 'although the meetings of this society should be devoted to the scientific rather than the artistic side of the subject, an occasional paper on practical picture making would be welcomed.'" The absurdity of this was so manifest that the meeting modified it, although they did not quite reverse it in the spirit advocated by Mr. Robinson, who would rather see it read: "Although the meeting of this society should be devoted to the artistic and practical side of our subject, the council wish to state that papers on the theoretical and scientific aspects of photography would occasionally be welcome on technical evening." Mr.

Robinson's article will be undoubtedly useful in calling attention to the desirability of considering photography more largely in relation to "the principal visible use," viz., portraiture. Picture making, in one way or another, is undoubtedly the chief use now made of photography, and probably all sides will concede that the work of a photographic society is mainly to consider it in relation to this end. Mr. Robinson's principal will generally be admitted, but the next question to arise is the kind of discussion or investigation which will lead most clearly to this end; whether it will not often be better to discuss and investigate the so-called technical matters, than esthetic or emotional principles. In the former case it is practicable to discover and use a nomenclature which conveys similar ideas to all; in the latter we have not yet reached that point. The consequence is that in the extensive discussion of artistic and emotional principles it has generally been found impracticable at the meetings of societies, and as a matter artists do not have discussion societies to any considerable extent. Even if Mr. Robinson succeeds in his attempt to capture the new institute for those interested mainly on the esthetic side, the difficulties inherent to the discussion of such matters would probably cause the society to slowly and surely drift back to subjects which have the same relation to photography as—to use Mr. Robinson's own simile—"type founding and paper making have to printing." If any way out of this difficulty could be found, probably those interested in "scientific" matters would be as much gratified as Mr. Robinson and those specially affecting the "artistic" side.

A New Sensitive Iron Compound.—An iron compound which will give a latent image by an exposure of about one second to a gas flame, requires development in ferrous oxalate, and then fixation in hypo to prevent further darkening in the light, would be looked upon as a myth unless put forward on the highest authority. We have it, however, on no less testimony than that of Professor Meldola, that such a compound has been discovered and made the subject of a patent not yet completed. The announcement was made on March 16th at a lecture before the Society of Arts, but no particulars were given.

The Testing of Photographic Lenses at Kew Observatory.—The authorities of Kew Observatory, where chronometers and thermometers have long been tested, have now made arrangements by which a photographic objective can be tested and a certificate will be given at a small charge. The tests cover equivalent focus, aperture (effective) with each stop on terms of the focal length, angle included and size of plate, number of reflecting surfaces, chemical and visual focus, workmanship of surfaces, flare spot, quality of glass, defining power, astigmatism, and relative illumination in different parts of the field.

Art in Photography.

BY MISS CATHERINE WEED BARNES.

[Read before the Social Art Club of Syracuse, N. Y., April 3, 1891.]

BEFORE showing the slides this evening, I wish to say something about the intimate relation art bears to photography. It is always difficult to unlearn, to remove one mental impression in order to replace it by another, and, photography has, until lately, been considered merely as machine work, and as having but the one merit of absolute correctness. If this were entirely true, the question of art could not enter into it so largely, as is the case, for it would then really be only machine work. The lens, to a certain extent, exaggerates, and a wide-angle one is apt to distort towards the edges of the plate. These qualities can be largely controlled in using a fine lens, and can often be advantageously utilized in securing striking effects. The artist, in photography, must use his lens as a painter does his brush, and become thoroughly conversant with its capabilities and limits, and he must also understand the speed of his plates, besides being a good chemist. Portraiture was once thought unworthy of being dignified into an art, although an idealized likeness was really what was desired, and is still. In a paper read before the photographic section of the Brooklyn Institute, last December, I tried to show some of my ideals in this work. (See AMERICAN AMATEUR PHOTOGRAPHER, February, 1891.) It is possible from the very first instant of focusing on a picture, to mounting the finished print, to use the highest degree of artistic taste and care. When selecting a point of view for a landscape picture, one camerist will choose with infinitely more judgment than another, and this is a vastly harder task when an interior is to be taken. The modern house is not always built with a view to having plenty of light, and on the proper distribution of this largely depends the beauty of an interior. It will often test your inventive faculties to their utmost to overcome inevitable difficulties and, even with long experience, it is necessary to often experiment. Yet it is so satisfactory to conquer obstacles and force a good picture to reward your efforts, that I wonder more camerists do not take up this branch of work. It is a keen pleasure to attempt certain pictures, simply *because* they are difficult. Easy work has no attraction for me, and yet, like the Quaker, who believed so firmly in peace that he was willing to fight for it, I believe in simplifying my work so as to accomplish most easily all the results it can possibly yield.

In developing a negative, one needs the most discriminating judgment as to solutions, their strength, proportion, and use. One worker will succeed where another utterly fails, because the former has a more perfectly developed conscience and recognizes the need of a secure foundation for the most artistic structure, reminding us of Longfellow's words :

"In the elder days of art	Each minute and unseen part,
Builders wrought with greatest care,	For the gods see everywhere."

A still wider field opens before the camera artist when he comes to printing from his negative. Nearly every week sees a new printing process, all tending more and more to artistic reproduction. The most familiar to every one is technically known as albumen print, the ordinary photograph, but in very many cases this cannot compare in beauty of effect with platinotypes, bromides, carbons, and plain prints, produced by mechanical means but permeated with the artist's deepest inspiration.

The very simplest method of printing is a blue print, or ferro-prussiate process, which requires after printing no treatment whatever, but washing in plain water. Wonderful effects can also be gained by judicious management of bromide paper. Platinotypes require very careful manipulation, but then yield exquisitely soft and clear half tones, and carbon paper is most beautiful of all but most difficult to use. The gelatine tissue must be made sensitive to light by immersing it in a solution of bichromate of potash, an extremely dangerous poison, but the tissue coming in several colors, and it being possible to secure still more varied effects by deep or light printing, makes the process very valuable and resemble what is known as photogravures. Platinums and bromides can be made to closely resemble engravings and etchings.

I want to say also that every separate print requires special attention, and it by no means follows that because one is good the next will be so, unless just as much care is given to it. Many elements come in for consideration. You must constantly alter your methods of work and, like Napoleon, be ready to change your plan of battle at a moment's notice. To illustrate this fact let me state that in making the slides to be used to-night, I was obliged to vary the time of exposure in different cases from five seconds to six minutes. Taste can be exercised also in selecting a mount for the finished print, and the increasing tendency now is towards unburnished pictures without gloss. Plain prints are made by taking Whatman's drawing paper, or other suitable material, and sensitizing it with nitrate of silver. The printed image can be toned in a variety of tints by using certain different chemicals, and a practical knowledge of chemistry gives one almost infinite latitude in devising a constant variety. But it is possible to best show the close relation of art to photography by considering studio work. Here the camerist can practically control the situation, and the most careful artistic training and broadest mental culture can be effectively utilized. The better one's training has been in this respect, the finer will be the photographs made, while a generous cultured literary taste will suggest manifold ideas for realization. Stories and poems can thus be illustrated better in many cases than by the brush or pencil. I am greatly indebted to previous art training in painters' studios and to some experience in dramatic clubs, and believe that much can be gained as to posing sitters by a careful study of natural, dramatic, but not theatrical effect, avoiding anything which suggests the unreality of the stage.

I will quote here, from one or two of my editorials on this subject, in the AMERICAN AMATEUR PHOTOGRAPHER. (See AMERICAN AMATEUR PHOTOGRAPHER for July, 1890.)

The slides shown to-night are by Miss Elizabeth A. Slade, Mrs. Augusta F. Arnold, and myself, slides and negatives being original work. There is no camera society distinctively composed of women but the New York Camera Club and the Society of Amateur Photographers of New York, to the latter of which we belong. Both admits them to full club privileges, including hard work, plenty of criticism, voting, and paying the regular dues.

Making lantern slides is a branch by itself, and but few women undertake it, though it is by no means the least fascinating part of camera work. Artistic taste is best shown in it by careful proportion of the picture on the slide to the size it will appear on the screen, the selection of the mat used (a very important point), the choice of tint, and how much of the picture can often be cut off with advantage. I make slides only by what is called reduction from larger negatives than the regular slide size, three and a quarter by four inches, and have my mats cut from my own designs. Many slides are made by simple contact, as in ordinary printing.

I have only indicated a few of the attractive features of this work, but wish earnestly that other women might gain the positive benefit photography has been to me, in lightening responsible duties and as a good mental and moral tonic.

I thank you all for listening so patiently, and especially thank those who have shown me the graceful courtesy and kind consideration implied in this evening's entertainment.



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EDITORIAL COMMENT.

Bind Your Magazine.—We believe that the yearly volumes of the AMERICAN AMATEUR PHOTOGRAPHER have a permanent value and well deserve binding. In order to diminish so far as possible the cost of binding to individual subscribers, we have had a supply of attractive covers made, and will either mail the covers or bind the volume for 1890 at a small charge. For further particulars we refer our readers to the advertising pages.

The Photographic Conference.—W. G. Chase, writing in the *Boston Herald*, makes this criticism on the management of the Conference: "The general feeling among amateur photographers is rather of disappointment, as it was expected that the society would partake somewhat of the character of the League of American Wheelmen, and establish consulates in each of the different towns and cities. All this may come later, but at present the society seems to consist of nothing but a few delegates from the different clubs, who form rather an exclusive circle, for the benefit of which the different members throughout the country subscribe."

Coming from such a source the criticism deserves serious attention. While it has been our belief from the start that the League of American Wheelmen furnished an excellent model for the organization of the Conference, since the latter presumably proposes to accomplish much the same work for amateur photography that the former does for wheeling, we have not felt like criticising the constitution adopted at the preliminary meeting, preferring to wait the issue of a later meeting, when, possibly, some changes might be adopted, looking towards a greater popularization of the Conference. But now that the issue has been raised, we feel that the time has come for all who have the interests of the movement at heart to speak out.

We have but one fault to find with the very excellent constitution adopted at the preliminary meeting, that it is not broad enough. It is our belief that a larger membership would have been secured and the influence of the Conference made more general by the appointment of a representative in all the larger cities to act as recruiting agent and advisor of members in his vicinity, whenever his advice was desired. This would place the Conference more in touch with amateurs at large than seems possible under the present system, and it has the further advantage of increasing the helpfulness of the Conference for the younger members. Every legitimate effort should be made to attract as large a membership as possible, if the Conference is to realize the promise of its inception.

The objection that at present the Conference is rather an exclusive circle than a general organization for the benefit of amateurs at large is one that will disappear as the roll of members increases. It must be remembered that little more was attempted at the preliminary meeting than to make a beginning, leaving to future meetings the task of making such changes in and additions to the constitution there adopted as would promote the objects sought to be attained. No one who knows the character of those who were present at the first meeting will believe for a moment that any of them entertained the thought, or harbored the desire, to constitute themselves a circle of the elect. A beginning had to be made in order to bring the Conference squarely before the amateurs. This was done, and it now only remains for others to join the society and labor with brain and pen to make it all it should be, a source of helpfulness and inspiration to all workers with the camera. We have confidence in the future of the Conference, and in the unselfish motives of its originators, and we cordially recommend it to the hearty support of all our readers.

In this connection a letter from Mr. Arthur L. Keyes, published in *Wilson's Magazine* for April 18th, is of interest. Mr. Keyes takes the same ground that we have taken that there is room and demand for a photographic association on the lines of the League of American Wheelmen, and complains that the Conference, as at present constituted, is rather a federation of clubs than an organization embracing all the amateurs of the country.

He objects to the distinction made in the membership, and makes the following suggestions: "First. Every person who owns a camera, or performs the operation of developing and printing without assistance from others, and is not a professional, should be eligible to membership. Second. The method of joining should be speedy and simple. Third. There should be an official organ, the subscription price of which should be included in the membership fee."

This last point has been met, we believe, by the establishment of an official organ published under the auspices of the Conference.

Dr. Nichols, in the *Beacon*, objects to the proposed establishment of a "purchasing agency," as we think wisely.

Professor Lippman's Photography in Colors.—Great diversity of opinion seems to exist as to the practical value of Professor Lippman's recently announced method of producing colored images of the solar spectrum on a sensitive film. Some experimenters report a fair degree of success, while others have only dismal failures to record. We do not know the reasons for this diversity in results, nor do we propose to suggest any. Some of our readers, however, may be interested in a brief statement of the probable theory governing the production of the colors, which seems to depend entirely on what is known as the "interference of light." The sensation of color is supposed to depend upon the wave lengths of light. According to Prof. Lippman, if "crossed" light be allowed to act upon a sensitive film, the silver, instead of being deposited equally throughout the film, thus producing an image in monochrome, will be deposited in layers of varying thickness determined by the half-wave length of the light falling upon them. Hence the film which coincides in thickness with any given half-wave length will allow only light having that particular half-wave length to pass through it, and, therefore, will form a transparency in colors more or less true to nature. The method adopted by the Professor is to place the sensitive film, during exposure, in contact with a bath of mercury, the effect of which is to reflect back the transmitted light, thus forming "crossed" light and "interference" in the light waves.

This account of the theory of the new method, which is taken from the *Practical Photographer*, is sufficient to give our readers an idea of the latest attempt to solve the question of the direct reproduction of natural colors on a sensitive film. We may further say that the colors are those seen in soap-bubbles and depend for their production on the thinness and grainless quality of the sensitive films. Professor Lippman employs plates made by the old Taupenot process.

The results stated to be possible by this method seem to bear some resemblance to the prismatic effects sometimes seen on thin collodion films, and we are reminded of an experiment once made by a friend which proved a great surprise to him. He had made a transparency on a collodion

emulsion plate, and during the washing the film left the glass. Not wishing to lose the positive, our friend floated it on the surface of a white mount and set it aside to dry, when to his surprise the collodion surface presented a beautiful iridescent effect, showing very clearly all the prismatic colors, even when looked at squarely. The print was regarded merely as a pleasing curiosity, and no further experiments were made to determine if the effect could invariably be produced.

A Rapid Sensitive Salt Free from Silver.—From England comes the news of Friese Greene's discovery of a rapid sensitive salt which contains no silver. The discovery was announced some months ago, but Mr. Frederick Varley has recently discovered a method of greatly increasing the sensitiveness of the original salt. At a recent meeting of the Society of Arts Mr. Varley developed a print on paper sensitized with the salt, and exposed under a negative for half a minute to the diffused gaslight of a burner in which fully forty per cent. of the light was cut off by an opalescent shade. Mr. Varley stated the one-twentieth of a second's exposure would have been ample had the gas jet been uncovered. Mr. Varley stated that no silver was present either in the salt, the developer, or any of the solutions used, but he did not give the composition of the salt.

Potographic Talks.—Miss C. W. Barnes recently delivered two lectures in Syracuse, N. Y., which were well received, as will be seen by the following extracts from the daily press of that city. The lectures were short and intended to preface, on each evening, a lantern-slide exhibition. The *Syracuse Currier* said: "At the Woman's Industrial Union in Montgomery Street last evening Miss Catherine Weed Barnes of Albany, a grand-daughter of Hon. Thurlow Weed, gave an entertaining review of her own experiences in the profession of photography, which she enthusiastically pursues and advocates as one of the most suitable for women. She advised women to take up photography as a means of earning a livelihood, and her discriminating criticisms proved her a cultured artist. She quoted R. W. Emerson and gave plenty of matter of fact evidence that she knew by practical experiment just what she was talking about. The slides exhibited were from a collection belonging to a New York club, of which Miss Barnes is a member, and were very beautiful. They ranged from Norway to Florida, and included admirable portraits and artistic interiors produced by the fair lady herself. The Florida views were the work of Mrs. Augusta F. Arnold of New York."

The *Syracuse Standard* said: "An unique exhibition of lantern slides was shown to the patrons of the Woman's Union last evening. Miss Catherine Weed Barnes of Albany, who conducted the entertainment, is a young lady of wealth and social position who took up photography as an amusement and became an expert. She has a very finely equipped studio at her home in Albany, and her work is well known among amateurs. The slides which were exhibited comprised, besides Miss Barnes' own work, that of several

well known amateurs, notably that of Miss E. A. Slade and Mrs. Augusta F. Arnold. The subjects covered an extended field and comprised some very meritorious studies. Those by Miss Barnes were especially fine and were heartily applauded by those who were present to enjoy the entertainment."

We give notices, also, from the *Syracuse Journal*, and *Standard*, of the exhibition a few days later. The *Journal* said: "Last evening the Social Art Club gave a handsome reception for Miss Catherine Weed Barnes of Albany, in the parlors of the Century Club. The mantels and doorways of the club house were elaborately and tastefully trimmed with palms, lilies, azaleas, and ferns. The entertainment of the evening opened with a 'Tarantella' by Heller, played in a brilliant manner by Mrs. Louis E. Fuller. Mrs. John R. Clancy then sang 'Elsa's Dream' from 'Lohengrin,' Prof. Kuenzlen played 'Scenes de Ballet,' by Berlioz, and Becker's 'Spring Song,' sung by Mrs. Clancy, followed. Miss Barnes then read a paper in which she gave her listeners an idea of the progress in photography and the heights it will attain. She thinks that the culture of one's whole nature should be used in the choice of idea and the composition of the picture. The slides of three ladies, who are members of a New York amateur society, were shown last evening, greatly to the delight of those present. Views of Norway, Florida, the Yellowstone, Mexican views, interiors and character studies were shown, proving the ambition and ability of women in this art. Miss Barnes claims equal artistic possibilities for photography as for painting and that, therefore, it is not a descent to leave the palette and brush for the camera. The gems of the collection were Miss Barnes' studies illustrating the poem of 'Enoch Arden.' After the display of the pictures the guests were received formally by the President, Mrs. Henry C. Leavenworth and the other officers of the club and presented to Miss Barnes." The *Standard* said: "The ladies of the Social Art Club are to be congratulated and complimented upon the reception they gave at the Century Club on Friday evening in honor of Miss Catherine Weed Barnes of Albany. Miss Barnes is an enthusiast, and is accomplished in photography, devoting much study and time to the art. The reception was a brilliant one, the members and their invited guests appearing in evening attire. Music by Mrs. L. E. Fuller, Prof. Thouret, Prof. Kuenzlen, and Mrs. John R. Clancy preceded an address by Miss Barnes on photography, illustrated by many beautiful slides. Each member of the Art Club felt a common interest in the event and welcomed every one with cordiality." The papers mentioned, quoted at length from Miss Barnes' remarks, but we give both lectures elsewhere in full.

The Blair-Anthony Combination.—The "trust" idea has invaded photography. The Blair Camera Company have recently purchased certain patent rights, owned or controlled by Messrs. E. & H. T. Anthony & Co., on cameras, bromide paper, films, etc., together with factories in New York

and Brooklyn, and Messrs. Anthony & Co. have purchased an interest in the Blair Company for which they will act as agents. The list of patents owned by the combine is a long one, and one wonders how any other firm can continue to manufacture cameras, films, paper, etc., without paying a royalty to the trust. If the effect of the combination proves to be a lowering of prices the amateur will have cause to congratulate himself.

The Combined Toning and Fixing Bath.—The increasing use of printing-out emulsion papers has brought about a revival of the old combined toning and fixing bath which has for some years been but little used. A recent editorial in the *Photographic Times* calls attention to the fact that many of the objections urged against this bath are the result of a lack of knowledge as to its proper method of use, pointing out the fact that prints toned in such a bath more than thirty years ago still retain their whites and depth of tone to perfection.

We had prepared an article on the subject for the present number, but lest we be accused of plagiarizing, we prefer to withhold the article and instead give the gist of the *Times'* editorial which we suppose to have been written by our friend, Dr. Ehrmann. The common error is in using the bath too long. When a black precipitate has settled in the bottle and the prints at once assume a black tone without passing through the immediate tones from yellow to brick-red, bluish-red, purple to black, the gold is exhausted and the tones are due to sulphuration and are not permanent.

The editorial suggests a method of obviating this danger, the essential principle of which consists in making up stock solutions of gold and hypo and adding the former to a sufficient quantity of the latter to make the bath, which is then used for only a single batch of prints. The bath actually recommended is as follows: four ounces of hyposulphite of soda and six drams of alum are dissolved in twenty ounces of water, after which one dram of freshly prepared chloride of silver and one-half dram of a ten per cent. nitrate of lead solution are added. The solution becomes turbid and should be allowed to stand for a day or two and then be filtered, and kept in well stoppered bottles in a subdued light. The gold solution is made by dissolving thirty grains of gold in eight ounces of water. For five 5 x 8 Omega, Aristo, or Iota prints take four ounces of the hypo solution and add to it, drop by drop and with constant stirring, two drams of the gold solution. The bath is now ready for use.

This is certainly a rational and scientific method of working, but we miss our old friend, sulphocyanide of ammonium, which has generally been regarded as a boon companion of the other ingredients of the combined bath, but which has the disadvantage of acting slowly on the deep shadows, so that in landscapes thus toned the distance is often of a bluish tone while the foreground is brown.

Salting and Toning Baths for Plain Paper.—The demand for prints on plain paper seems to be on the increase, and we have received many inquiries lately on this subject. One of the best salting baths known to us is :

Chloride of sodium,	125 parts.
Citric acid,	5 parts.
Irish moss,	25 parts.
Gelatine,	10 parts.
Albumen,	250 parts.
Water,	1,000 parts.

The moss and gelatine are dissolved by gentle heat and the other ingredients are then added, and the solution is filtered. The paper is floated on the bath for two minutes. Sensitizing is done on a sixty-grain silver bath. The printing must be carried considerably further than with albumen paper, and the preliminary washing is the same as usual.

It is by no means an easy matter to obtain an engraving black tone on plain paper, but the following baths give very dark tones :

1. Gold Toning.—Tungstate of soda, 20 grains.
Phosphate of soda, 20 grains.
Boiling water, 3 ounces.
Dissolve and add
Chloride of gold, 1 grain.
Allow to cool, and add
Water, 5 ounces.

2. Clark's Platinum Bath.—Dissolve sixty grains of chloro-platinite of potassium in two ounces of distilled water. To make the toning bath take:

Stock solution,	1 dram.
Nitric Acid,	3 drops.
Distilled water,	3 ounces.

When the desired tone is obtained, throw the prints into cold water containing a little carbonate of soda, then fix.

A Lens Testing Bureau.—What we have thought should be established in the United States, a place or bureau where lenses, for a consideration, could be impartially tested, has been recently established with success in England, and it is a subject which is worth considering by the American Photographic Conference, meeting the latter part of May in New York. We refer to the circular lately issued by the Kew Observatory at Richmond, England, and signed by G. M. Whipple, Superintendent. Some of the conditions are that each lens must bear a distinguishing number on the tube. No lens will be received exceeding four inches in diameter, or one having an equivalent focus of more than thirty inches. The flange mounting must accompany each lens. Lenses are tested twice a month, 1st and 15th, in sets, and must be delivered three days before either dates, and the class of test to which the lens is to be subject must be specified. Two classes are named ; in Class A the expense is \$2.75 per lens ; in Class B 75 cents, which is to be paid when the lens is ready to be returned.

In Class A the test is a determination of the length of equivalent focus.

Size of effective aperture with every stop in terms of focal length. Angle of field of view and size of plate effectively illuminated. Number of external reflecting surfaces. Coincidence of visual and chemical foci. Presence of flare spot. Workmanship of surfaces, structure, and degree of transparency of glass. Centering in mount. Defining power. Relative quality of illumination in different parts of field. Amount of astigmatism or optical distortion.

In Class B the test is a determination of the length of equivalent focus. Size of effective aperture with largest stop. Angle of field of view. Size of plate effectively illuminated. Coincidence of visual and chemical foci.

Each lens that has been tested will be specially marked. Any lens submitted may be refused if the superintendent considers it unfitted for examination. A certificate is furnished with the lens after it is tested. Duplicates are supplied when the original is surrendered.


It will be seen that the conditions are very simple and the tests, being conducted by a scientific, unbiased institution, are most certain to be reliable.





Darius Goff.

The death of Mr. Darius Goff, of Pawtucket, R. I., occurred Tuesday, April 14th, at the age of eighty-two years. Mr. Goff was a director of the Blair Camera Company, and its president from 1882 to 1885, when he resigned in favor of his son, D. L. Goff, who now fills that position. He was one of Rhode Island's most prominent and staunch business men, being president of several large corporations and a director in several others, including banks, and a Republican of the old school. His sons maintain the same political faith, Lyman B. Goff, one of the two, receiving the Republican nomination for the Lieutenant-Governor of Rhode Island for the present year, but declining to serve owing to his aversion to politics. Mr. Goff was one of T. H. Blair's financial supporters at the commencement of his enterprises, and his calm wisdom has done much to shape the policy of the Blair Camera Company. He will be greatly missed by his state, city, and many old and young friends who had in him a kind and wise adviser.



SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

Postal Photographic Club.—On this round of the Club Albums "extremes meet," as one of the members express it, the October Album, which was the poorest, coming with the present March number, which is the best or one of the best we have had the pleasure of seeing.

In the former Album, Miss Eddy won the first prize for artistic merit on her very pleasing composition, called "A Sunny Kitchen," and Mr. Chase the first for technical merit on his excellent portrait of W. D. Howells in his study.

In the March Album it would be far easier to state those that are not good than to describe the many that are. But first of all must be mentioned the two fine platinum landscape studies by Mr. Dun, which are both artistically and technically perfect; and if they do not bring their owner some prizes it will only testify to the fact of the general excellence of this Album. Mr. Pulsford's and W. A. Prentiss' snow views certainly come next, and are rare treats in this difficult line of work. But for technical merit alone Miss Johnson, we think, should be awarded the palm on her fine interior work in Mrs. Hearst's house. From Miss Clarkson we have four pretty Easter studies, three of which we have already seen reproduced in the following magazines: *Sun and Shade*, *The Photographic Times*, and *Illustrated American*. Mr. LeBreton, besides other work, gives us a very charming thing in "Spring Time," which represents a young maiden, clad in girlhood's simple white, clinging, in graceful attitude, to the branch of a tree, through the foliage of which the sunlight streams, and well illustrates the quotation he has chosen for it:

"We greet thee, Spring, sweet girlhood of the year."

"And flecks of golden sunlight softly dance
Around thy vernal throne."

Messrs. Hansman and Graves furnish us again with excellent platinum work from equally as good negatives. Mr. Williams's two interesting studies, one, "Shooting a Fish," especially so; and Mr. Spaulding's bromide enlargement, "After a Storm" is one of the best seascapes we have seen. Nor are roads through the woods, which some of the members dub "chestnuts," there having been so many of them, lacking in this Album, for Miss E. S. Needles and Mr. Smith give us fine samples of them. Excellent microscopic work is also furnished us by Mr. W. H. Walmsley; and Mrs. Appleton's photo of the "Prow of Constellation" is all that could be desired for fine lens work, in fact is a little too sharp to be quite artistic. But we must pause for lack of space, and only add that we trust this spring Album, excellent though it be, still may represent the spring-time in the work of the club, and that, as the year ripens, so may their efforts also, "Onward" ever being their motto, their Christmas number bringing to us a ripe harvest of their summer labors.

The Society of Amateur Photographers of New York.—*First Annual Dinner, Friday evening, April 3d.*—The place was at Sherry's, Fifth Avenue and 37th Street, and forty covers were set. The table was handsomely decorated and in the reception room was an enlargement of a group of the Board of Directors, which was reproduced in smaller form by photogravure on the menu card. The dinner was highly successful and was enthusiastically enjoyed by several of the older members. A very artistically arranged menu card was gotten up for the occasion, having the front page adorned with photographs of the officers and a group of the Board of Directors, while on the back was a cluster of photographs made by members. Presiding at the table was the President, James H. Stebbins, Jr., and near him on either side were the former Presidents of the society, F. C. Beach, Dexter H. Walker, and Charles W. Canfield. Mr. Canfield suggested that the society should undertake to have a memorial tablet to the honor of Dr. Draper placed on the building in New York where the

doctor worked when he first discovered how to hasten the rapidity of the daguerreotype. To him belongs the credit of making the daguerreotype a success. Mr. Walker spoke upon the value the society had been to him, of the enthusiasm that abounded when it was first organized and how highly it was esteemed abroad. Mr. Beach briefly reviewed the history of the society, and expressed great satisfaction at the steady advance that had been made.

Other addresses were made by Mr. A. L. Simpson and Mr. J. Wells Champney who seconded Mr. Canfield's idea, and by Mr. Edward Leaming, on the use of photography in medical science and its general use in scientific investigations, and by Mr. Charles Wager Hull, on the early days of photography, and by Mr. Charles H. Davis, on the advantage a good sky-light for portraiture would be to the society. Between the addresses novel musical performances were given by Professor Tuerk's talented artists. The dinner terminated by the photographing of the assembly, with the aid of four of Mr. A. L. Simpson's novel flash lights, which were set off simultaneously with great success. The special committee, on which were Mr. Ernest Warrin, Mr. T. J. Burton, and Mr. Charles H. Davis was particularly commended for the thorough manner in which the arrangements had been carried out. Mr. Burton acted as toastmaster.

Exhibition of Lantern Slides, Friday evening, April 10, 1891.—An illustrated talk, by Dr. Charles L. Mitchell of Philadelphia, on "Switzerland Through the Camera." The slides were made on dry plates and the negatives on orthochromatic films. The Doctor, who seemed perfectly familiar with the views of which there were one hundred and sixty, very entertainingly described them. Switzerland formed an unending panorama for the camera. Excellent roads ramified all parts of the country making it very pleasant and easy to get about. His illustrations of the mountain scenery, of the remarkable waterfalls, the noted glaciers at Mt. Blanc, Chamonix, and the Mer de Glacé, were beautiful and extremely interesting. The source of the rivers Rhone and Rhine was shown coming out as a small stream from the foot of the great glacier, at the upper end of the valley. Views of the great St. Bernhard pass and mountain scenery were shown, also the St. Gotthard pass, mountains and entrance to the great Gotthard tunnel, illustrations in Geneva, Lucerne, and of their respective lakes were given, and also along the river Aar.

In Berne the bear is pictured everywhere, as was shown in the views of that city. As a finale several beautiful views of the celebrated Matterhorn mountain were shown, and the way clouds gathered or formed about its peak at different times of the day. A unanimous vote of thanks was accorded to Dr. Mitchell when the entertainment ended. He appears to have been very industrious in the use of his camera, and afforded much instruction by his lucid explanation of the characteristics of the country. Out of five hundred exposures only forty were defective. He plainly showed the value of orthochromatic plates in photographing distant mountain scenery and clouds. It was surprising how well these distant objects were brought out. Some of his views will be shown at the New York May exhibition.

Tuesday Evening, April 14th.—Seventh Annual Meeting.—President James H. Stebbins was in the chair and called the meeting to order shortly after 8.30 o'clock. Contrary to the usual custom of annual meetings, the officers, with the consent of the meeting, had the scientific business come first, and introduced Mr. William M. Murray who read a paper on the "Making of Lantern Slides," which was replete with sensible suggestions, stated in condensed paragraphs. He emphasized the need of having a first-class negative to begin with and the desirability of proper facilities for reducing, together with a certain artistic training by which one should know how to cut out by matting the useless features of a picture. He advised the use of the hydroquinone developer, as he thought it gave a warmer tone and stated that it was necessary to judge the development of a lantern slide by reflected light; to carry the development along until the picture looked somewhat overdense, as it was surprising how much would fix out, in the fixing bath. He was accorded a vote of thanks for preparing the paper. Mr. A. Peebles Smith demonstrated a new combined platinotype and iron paper called "Gravuretype." The film is of a greenish yellow color. It is printed one minute by sun-light behind an ordinary negative and developed on a silver bath like the kalotype paper. Mr. F. C. Beach exhibited specimens of the new "Phanogen" developer, supposed to be a mixture of hydroquinone and eikonogen. It is in powdered form, put up in small sealed glass vials, enough to make three or four ounces

of developer when dissolved in the same quantity of water. He also exhibited the "Watkins' Exposure Meter," and explained the principle on which it was based. Also a cloud shutter invented by H. B. Norton, of Minneapolis, Minn., called a "Cloud Catcher." It is attached to the front of the lens, and is simply a rotary shutter, carrying on its surface an adjustable plate for enlarging or decreasing the size of the shutter aperture. The peculiar shape of the shutter permits the plate to have as full an exposure on the edges as at the center. This ended the scientific business. Then President Stebbins read his annual report. Among other things he said sixty new names had been added to the society during the year. There had been several special meetings and lantern-slide exhibitions held. More had been done in slides than in any other branch. Very few members had been making prints. Much attention had been given to mat-surface papers which seemed to be becoming more popular. The financial condition of the society was quite satisfactory. A considerable sum would be saved by the stopping of the publication of the journal of the society. The various committees had attended to their duties in a satisfactory manner. The dark-room had been kept in good order and the Hoover pyro developer had been placed therein for the use of members. The bromide enlarging room had been put in order, being supplied with a 12-inch double condenser and an electric arc light for illumination. New furniture had been added, and the bronze medal awarded at the Paris Exhibition was now in the possession of the society.

Friday Evening, April 17th, a special exhibition of lantern slides occurred, the work of two members of the society, Mr. James H. Stebbins, Jr., showing some forty views on the coast of France, a number in and about Entretat, showing the manner of fishing, washing, and bathing, by the natives, the curious boat-houses on the beach, and the industry of manufacturing fishing nets. One study of an old fish-woman was especially interesting. Some of his views were slightly out of focus, owing, as he found out afterwards, to a difference in the plane of the ground glass from that of the film. Mr. A. L. Simpson's pictures were, as a whole, remarkably good, and he graphically described a few of the difficulties he encountered in making them. One of his handsomest pictures was an instantaneous view of the Arc de Triumph. Other street views, views of churches, and the exposition grounds taken from the top of an omnibus with his lunch-basket camera, were greatly liked. Altogether this exhibition, solely the work of two members of the society, was appreciated, and it is hoped other members will follow their example.

Friday Evening, April 24th.—*Exhibition of Lantern Slides.*—The work of the Cincinnati Camera Club, and the Detroit Lantern-Slide Club, was the pictures shown. Mr. William M. Murray presided as the lecturer and rather severely criticised a few of the pictures, more as regards their technical qualities than artistic merit. In the Cincinnati set he noticed nearly all of the slides were professionally made from the negatives of members, which he thought accounted for the lower quality of work than last year. The views worthy of special mention were: "Quiet Retreat," "The Ford," the latter a very perfect picture, both by Mr. H. C. Fithian; "Spring Furrows," and "In Harvest Time," by Mr. H. J. Bunton; "View on the Thames River," and "Surf at Watch Hill," by Dr. F. A. Hunter; "On Miami Canal," and "Watching the Photographer," by Mr. M. A. High; "Burnet Woods in Winter," by Mr. A. Denniston Smith; and several views in Venezuela and Mexico, by Mr. George Bullock and Mr. H. F. Woods. More variety in the character of the work of the Detroit club was noticeable. The views were made by seven members. Those of special interest were: "Main Bridge, Belle Isle Park," and "Trinity Church, Boston," by Mr. Porter; "The Old Oaken Bucket," "The Harbor Tug," and "Road to the Mill," by Mr. C. C. Hinchman; "The Little Spring Brook," and "Ear of Corn," by Mr. Noble; "The Old Orchard," "Country Barnyard," and "Sacred Pigeons at Venice," by Mr. Brace; "A Bunch of Roses," by Mr. Tracy, and a concluding beautiful water-fall view in "Big Cottonwood Cañon." As a first effort of a young club the views were quite creditable. Following these were a few miscellaneous pictures by Mr. A. Peebles Smith, and a number of artistic portrait studies by Mr. Charles H. Davis, both of the New York Society.

The society was lacking in two things, a skylight for portrait work, and a library replete with photo literature. He advised that the literature on hand be bound so that it might be accessible. The Lantern-Slide Committee had done noble work in providing so many

entertainments for the society. The Chemical Committee, of which he was chairman, had tested a few of the new developers. Graphol, a French preparation, his committee had found to be a combination of hydroquinone and eikonogen, it turned dark easily, and possessed no particular advantage. Crystalol, another developer, put up in liquid form, one meter of which is added to one quart of water to form the developer, was a combination of hydroquinone, caustic soda, and sodium sulphite. It was better to use bisulphite of soda as a preservative when carbonate of potash is employed as an alkali, since it contains a larger percentage of sulphurous acid. Bisulphite of soda is resolved into sulphite in the presence of carbonate of soda. It is useful in clearing up old eikonogen solutions. Hydroxalaminine, added to an eikonogen, makes a colorless solution. The Buffalo argentic and other papers had been tested, and the kalotype paper was very promising, since it is easily worked and is quite simple; he thought it might press silver paper very hard, as it was cheaper. The committee on meetings, he said, had unexpected difficulties in obtaining papers to be read. He thought, at the present rate of increase, it would not be long before the society would need to have a building of its own. His report was accepted and ordered placed on file.

Mr. T. J. Burton, as Secretary, read his report, in which he gave a *resumé* of the work of the society during the year; alluded to the auction sale as having been a success; thought the members were remiss in the matter of prints, and hoped the fourth annual exhibition would be the means of bringing out more work in this line. On April 1st the total membership was 268. The society had obtained excellent quarters and they were regarded as the largest and finest of any society in this country. He felt sure that it was bound to grow, and he had labored hard with others to increase the membership to its present state. His report was approved.

Mr. F. C. Beach, as Corresponding Secretary, spoke briefly about the work of the society; that it stood well in the estimation of other organizations, both at home and abroad, and that he had received many letters asking for suggestions, copies of the by-laws, and other information, from new associations. His report was approved.

The Treasurer, Mr. C. C. Roumage, made a full report of the society's finances, explaining that in all, five thousand dollars had been expended during the year, two thousand for improvements and the balance for running expenses. The report was accepted and, on a special vote, was ordered to be printed and distributed to members of the society.

The report of the Nominating Committee, signed by John T. Nagle, M.D., Chairman, A. P. Schoen, Secretary, H. M. Grisdale, J. Wells Champney, and E. C. Slater, was read and approved. The nominations therein stated were submitted to the meeting and the Secretary was authorized to cast one ballot for the society, which he did, resulting in the election of the following officers and directors: President, James H. Stebbins, Jr.; Vice-President, R. A. B. Dayton; Recording Secretary, T. J. Burton; Corresponding Secretary, F. C. Beach; Treasurer, C. C. Roumage; Directors, Frederick Vilmar, Frank C. Elgar, R. L. Bracklow, E. Warrin, Dexter H. Walker, L. B. Schram, H. N. Tieman, H. S. Mack.

Just before adjournment, Mr. A. L. Simpson presented the society with a copy of his 11 x 14 flash-light photograph of the first annual dinner of the society, taken April 3d. It was remarkably well lighted, beautifully clear, and was, as a whole, very satisfactory. He was thanked by the society for the gift. Indeed the meeting was in an excellent frame of mind during the evening, as every one was favored with a vote of thanks.

Pittsburg Amateur Photographers' Society.—At the April meeting the following officers and committees were elected for the ensuing year: President, W. S. Bell; Vice-President, R. F. Smythe; Secretary, J. H. Hunter; Corresponding Secretary, W. J. Hunker; Treasurer, H. W. Beymer; Executive Committee, C. C. Craft, L. S. Clarke, D. Beech, T. T. Brown, and R. F. Smythe; Committee of Arrangements, T. K. Gray, J. H. Hunter, and W. J. Hunker; House Committee, H. W. Beymer, George D. Heisey, E. E. Erensburg, A. R. Neeb, and O. H. Darlington.

Cincinnati (Ohio) Camera Club.—Organized January 24, 1884. Rooms No. 106 Broadway. Officers elected April 13, 1891, for 1891-2: President, T. B. Collier; Vice-President, Arthur L. Fogg; Recording Secretary, E. E. Shipley; Corresponding Secretary, H. C. Fithian;

Treasurer, M. A. High; Librarian, Dr. Arch S. Carson; Meetings first and third Mondays each month.

The Boston Camera Club.—Illustrated Boston.—On Wednesday evening, April 15th, the members of the club gathered in force to view the new set of slides illustrating Boston, which is soon to be sent out on its long trip around the world. The reconstructed set numbers one hundred and four slides, illustrating many varied scenes and phases of life in the old Puritan City, and is much more complete than the original set. The slides, too, are of a higher order of merit, an improvement largely due to the pains-taking work of Mr. William Garrison Reed, who made most of them, and who has been urgent in season and out of season, persuading the members to obtain the negatives which were needed to make the set complete. As is well known the Boston Camera Club was the first to suggest an "Interchange of Illustrated Subjects," and in 1888, "An Illustrated Description of Boston," embracing about sixty slides, was prepared. Of this, duplicate sets were made, and have been in active circulation at home and abroad for two years. The present set is an enlargement of the first and a decided improvement over it in the opinion of those who have seen both sets on the screen. The slides are all made on wet collodion plates, and are remarkable for crispness and clearness, notwithstanding the fact that some of the original negatives left much to be desired for reproduction as slides.

A very full reading accompanies the set and there can be no question as to the value of such work in conveying a graphic idea of the places represented. The set opens with two or three preliminary slides, showing maps of Boston at different periods in its history, and the illustrations proper begin at the harbor entrance, with a fine slide of "Boston Light." The harbor views include, among others, "Fort Independence," the "Mayflower" and the "Volunteer," and "Bug Light." Then follow views of prominent objects seen from the inner harbor, including the "Navy Yard," "Bunker Hill Monument," and others. Following these comes an interesting series of views of old landmarks, public squares, prominent buildings, bits of scenery in the parks, the whole making a graphic story of the Boston of to-day, with occasional glimpses into the Boston of a by-gone generation. The text of the reading is brief but to the point, and text and slides together form a piece of careful and thoughtful work of which all who had a hand in them have reason to be proud.

Beginning May 11th a sale exhibition of prints from negatives by members will be held in the club-rooms. The object of the sale is to raise a fund for the increase of the library.

The Chicago Camera Club.—The annual meeting was held Tuesday evening, April 14th, and the following officers were elected: President, Fred K. Morrill; First Vice-President, W. H. Shuey; Second Vice-President, Mrs. James W. Scott; Secretary, John W. Buehler; Librarian, Miss Josephine B. Putnam; Directors, W. B. E. Shufeldt, Thomas W. Patterson, Dr. C. F. Matteson, J. B. McCleery, Mrs. Frank Douglass. Mr. E. Burton gave an interesting lecture on his travels, illustrated by lantern slides. The treasurer's report showed receipts of \$4,214.85 and expenditures of \$3,885.29, leaving a balance in hand of \$329.29.

The American Lantern-Slide Interchange.—The demand for entrance to the interchange appears to be growing. The latest applicant is the Joliet Lantern-Slide Club. The work of this season is nearly at an end; during the latter part of June the Executive Committee selects the slides to be sent abroad next fall.

The Hoboken Camera Club.—President Thomas reports that the "Grand Fair," held by the club in its new building at 380 Park Avenue, Hoboken, N. J., was very successful, netting quite a good sized sum for the benefit of the club.

The Columbia College Amateur Photographic Society.—The sixth annual exhibition was held May 7th and 8th, at the Chemical Museum School of Mines. The committee is Oswald Jackson, Jr., H. M. Brookfield, and Charles Barton. We hope to have a report of the exhibition in our June number.

The Toledo Camera Club.—This club gives frequent lantern-slide meetings, presided over by Mr. Edmund Locke. It meets the first Monday night of each month. The officers are F. S. Anable, President; E. L. Griffith, Vice-President; H. E. Richards, Secretary and Treasurer.

Photographic Department of Brooklyn Institute.—At the regular meeting on April 14th, Mr. J. Wells Champney spoke on "Selection in Photography," illustrating his remarks with

characteristic chalk sketches. On Saturday, April 25th, several members visited the Central Park menagerie in New York and photographed the owls.

Photographic Section of the American Institute.—Henry J. Newton presided. An exhibition of slides was given, being the dry plate represented by Mr. Cornelius Van Brunt, and the wet or Ferrier slides, as shown by Mr. F. C. Roche. Mr. Newton did not believe in "Looking Backward."

THE AMERICAN PHOTOGRAPHIC CONFERENCE.

The meeting room of the Society of Amateur Photographers is so centrally located that it is probable the business meetings will be held there. The first meeting is called for ten o'clock, Tuesday morning, May 26th, and will be devoted to organization and the consideration of communications; one matter is likely to be whether the Conference shall publish its own proceedings or not. Tuesday evening Mr. Wallace Goold Levison of the Brooklyn Academy of Photography is to give an exhibition at the Fifth Avenue galleries with two screens, illustrating the "History, Art, and Instantaneous Photography as an Aid to Science of Photography."

Wednesday afternoon an excursion around New York Harbor is to be given to the delegate, as the following invitation shows:

JOINT COMMITTEE.—THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK
AND THE BROOKLYN ACADEMY OF PHOTOGRAPHY.

New York, May 1, 1891.—The Society of Amateur Photographers of New York and the Brooklyn Academy of Photography have arranged to tender to the delegates attending the American Photographic Conference an excursion around New York Harbor, on the afternoon of Wednesday, May 27th.

The undersigned having been appointed a committee on behalf of their respective organizations to arrange the details, desire to announce that the large steamer, "Laura M. Starin," has been engaged, and that she will start from Jewell's Wharf, Brooklyn, at 12.30 P.M.; and from Pier 1, N. R., New York, at 12.45 P.M.

The price of tickets (each admitting a gentleman and two ladies) has been placed at one dollar, and the number is limited. Dark-room facilities will be arranged for the changing of plates. A competent caterer will also be on board. Persons desiring tickets can apply to any member of the committee: *Brooklyn Academy of Photography*—Harry S. Fowler, 578 Halsey Street, Brooklyn; Frederick M. Lawrence, 129 Broad Street, New York; Starks W. Lewis, 24 South Street, New York; *Society of Amateur Photographers of New York*—T. J. Burton, 113 West Thirty-Eighth Street, New York; F. C. Beach, 361 Broadway, New York; Fred Vilmar, 66 Duane Street, New York.

Some of the papers to be read at the Conference are "The requirements of a Modern Photographic Society," by C. R. Pancoast; Dr. A. Clifford Mercer will deliver an illustrated lecture on some photo-micrographic subject; Prof. Charles Dury will explain the aid the science of photography is to the naturalist in researches of natural history, and Dr. Ely Van Der Warker, of Syracuse, besides giving an address of welcome, will read a paper on "Photography in the Marine Tropics." A banquet is to be given on Thursday evening, the 28th. As the event comes when the Fourth Annual Exhibition is in progress it is expected the attendance will be quite large.

THE FOURTH ANNUAL JOINT EXHIBITION.

The time for entering exhibits closes on May 11th; the exhibition opens on Monday evening, May 25th, at the Fifth Avenue galleries, 366 Fifth Avenue, near the old Stewart mansion, with a reception and a private view. There will be a large number of exhibitors and a revolution in prints. The foreign exhibits will be superior in point of number and variety to previous exhibitions, representing the work of several prominent photographers. A very handsome catalogue is being gotten up which will be illustrated. The committee has decided to issue, as awards, handsome silver medals to be distributed as the Board of Judges may direct. Lantern-slide exhibitions will be held nearly every evening for about three-quarters of an hour; arrangements are being made to have a different set of views each night. Admission is to be twenty-five cents and season tickets, good for two weeks, one dollar. The Committee of Arrangements are F. C. Beach, A. L. Simpson, and C. C. Rourage. The Board of Judges are Thomas Moran, Will H. Low, and Edward Bierstadt.

Boston Camera Club.—The regular monthly meeting was held Monday evening, May 4th. After the usual routine business had been transacted, two new hand cameras were exhibited, one, a whole plate box, devised by Mr. Eaton, showed great ingenuity, while Mr. Currier's 4x5 box was greatly liked. A lantern exhibition followed, including slides by the Lynn and Lowell clubs. The general average of the slides was good, but the Lynn slides were more generally interesting, owing to the wider field covered by them.

"Index Rerum Photographica," by Dr. John H. Janeway, U. S. A., continued from page 184

by the action of nitric acid and sulphuric acid upon paper or other forms of cellulose—the resulting pyroxylin being dissolved after thorough washing in suitable solvents mixed with camphor, and then treated mechanically. Celluloid films were first introduced to the photographic world by John Carbutt, of Philadelphia, Pa., and have quickly found favor and admiration, especially from the tourist, owing to the great reduction in weight. Their treatment in developing and after operation is exactly the same as for ordinary dry plates. They are easily dried. After clearing and washing they can be laid flat, blotted off and left to dry on a table, but it is preferable to suspend them by a corner by a clip. Some apprehension has arisen as to their liability to explosion. As at present made there seems to be no danger.

CEMENTING LENSES WITH BALSAM—The function of this cement is to obliterate the reflection from their contact surfaces and to render the two lenses practically one. When the curvature of these interior surfaces is very deep, and a ray is transmitted in a direction oblique to that part of the surface upon which it falls, it will be reflected, not transmitted, and therefore lost. We are now alluding to contact surfaces. But by the interposition of any transparent fluid or varnish between the lenses, so as to place them in optical contact in contradistinction to the mechanical contact in which they were previously, the achromatic lens becomes a homogeneous mass, so far as ordinary internal reflections are concerned, and the transmission of the ray is then affected only by the outside or air-surrounded surfaces of the lens. Although any transparent fluid seems to effect optical contact between the surfaces of an achromatic lens, that which best answers the purpose is Canada balsam, or a mixture of castor oil and balsam.

CEMENT, OPTICIANS'—For ordinary use—Resin, 1 pound; melt and add plaster of Paris, 4 ounces.

CERAMIC PHOTOGRAPHS OR ENAMELS—M. Lafon de Camarsac, about 1856, discovered a process whereby the production of photographs fixed by fire was accomplished, but his method is still a secret. After numerous experiments, A. L. Henderson succeeded in the following manner: A thin collodion transparency—one suitable for a lantern—developed by sulphate of iron, 5 grains; acetic acid (Beaufoy's), 15 minims; water, 1 ounce, saturated with alum. After being cleared with cyanide, he places it in a solution composed of bichloride of platinum, or its compounds, 5 parts; bichloride of tin, 30 parts; iodine to saturation; acid hydrochloric, 960 parts;

silicate of potash, 20 parts; acetate of lead, 40 parts; water, 8,000 parts. This will, to a certain extent, displace the silver, depositing platinum in its place. At any moment the image may be treated with a solvent such as nitric acid, which will remove the silver without attacking the platinum, and the depositing of the solution will still proceed after this treatment. If the silver be present in the form of a chloride or iodide, which is insoluble in nitric acid, it can be oxidized or reduced by heat. As soon as the image is sufficiently dense it is immersed in a 5 p. c. solution of sulphuric acid in water saturated with boracic acid, then transferred to the enamel tablet, dried, and is ready for firing. Glaze first, and not after applying the picture. The following colors are produced by the different oxides: Tin and arsenic, white; gold, red or purple; copper, green or red; silver and uranium, yellow; cobalt, blue; iron, reddish yellow; platinum and tin, various tints of brown; iridium, black.

CHANGING BAGS AND BOXES—Contrivances by means of which exposed plates may be changed for unexposed plates, without the use of the dark room or in the field. The former are generally made of two or more thicknesses of non-actinic fabric, with a ruby or yellow glass set in to enable the operator to see inside the bag, and sleeves surrounded with elastic, through which the hands are thrust. The boxes are of different shapes, and are oftentimes quite complicated in their mechanism.

CHEMICAL ACTION OF LIGHT—There are few, if any, of the elements, or some one of their compounds, in either the organic or inorganic kingdoms, that are not more or less affected by the chemical action of light. A trace, even, of some of the most valuable alkaloids cannot be obtained, even with the most careful and delicate analysis, from trees and shrubs grown in the dark or badly lighted localities, that produce them in abundance when grown in plenty of sunshine. And it is well known that there is a decided chemical action produced upon such unpromising substances as ebonite and asphaltum. The chemical action of light upon the various salts, etc., used in photography will, for convenience, be mentioned as those substances appear. The chemical action varies considerably, according to the state of the atmosphere; on a bright, clear day it is more rapid than in dull, gloomy weather. The light, in order to act most favorably on chemical substances employed to form photographic pictures, should be white.

CHEMICAL FOCUS.—A lens is said to have a chemical focus when a portion of the field, either to the right or left of the center, is sharper than the center—a fault of the greatest magnitude, and should cause

it to be rejected. For it should be so corrected, for chromatic aberration, that the chemical and visual focus should strictly coincide.

CHEMICAL THEORY—Since the discovery of the art of photography, the phenomenon of the action of light on the silver compounds employed to obtain the photographic image has attracted the continued attention of philosophers and experimentalists, and, from the nature of the subject, different theories have been set forth to explain it. One of these theories advanced is based on the affinity of the reagent for oxygen. In the presence of the developer, the sub-salt is reduced, and an equivalent of the metal combines with the unaltered silver salt just in contact with it to form a sub-salt of silver, which is in its turn reduced. Thus the image is formed by the reduction of the unaltered silver salts into sub-salts, and those sub-salts into metal. But none of the purely chemical theories, so far advanced, seem to give a completely satisfactory explanation to the mystery of development. May not the dynamic theory of light play an almost equal part with the chemical? See Latent Image.

CHEMISTRY—Its importance—A survey of the history of photography for the last fifty years will show that its progress has kept pace with the advancement of chemical knowledge, and it behooves all who would be good workers to pay more than ordinary attention to what should be the foundation—chemistry.

CHIAROSCURO—Literally a design of two colors—The particular distribution of the lights and shades of the piece with respect to the ease of the eye and the effect of the whole piece. In photography, commonly called light and shade.

CHINOLINE BLUE—Cyanine, discovered in 1861, by Grenville Williams, from the mother water of quinia, which, from its beautiful tint, he gave the name cyanine. Used as a valuable optical sensitizer, and frequently combined with erythrosine.

CHINOLINE RED—Derived from the same source, and combined with cyanine in sensitizing emulsions and plates for color values. The only objection to the use of the above (blue and red) is their want of durability.

CHLORIDE OF LIME—See Calcium.

CHLORIDE OF MAGNESIUM—See Magnesium.

CHLORIDE OF GOLD—See Gold.

CHLORIDE OF SILVER—See Silver.

CHLORIDE OF SODA—See Sodium.

CHLOROPHYL—The green coloring matter of vegetables. Though the chlorophyl of different plants does not possess the same degree of sensitiveness, that from ferns is exceedingly sensitive. Its optical properties are remarkable. A concentrated solution absorbs all the rays of light with the exception of the least refrangible red, but when diluted it exhibits characteristic bands behind B, between C and D, before E, and two behind F. The band in the red is especially characteristic for its clearness and brilliancy, even with exceedingly dilute solutions. Ives introduced it into orthochromatic processes, and used that procured from the common plantain or bule myrtle (periwinkle), *Viscor minor*. It should be applied to a collodion emulsion previous to washing. The time of exposure through a yellow screen is much lengthened.

CHLORINE—Action of—Applied to moistened albumen and Eastman prints, in a strong solution or gas, rapidly turns the metallic silver into the white chloride of silver, and causes the image to disappear instantaneously.

CHROMATE OF SILVER—See Silver.

CHROMATIC ABERRATION—Lenses may be compared to a system or series of prisms with infinitely small faces, and, united at their bases, they not only reflect light, but also decompose it like a prism. On account of this dispersion, therefore, lenses have really a distinct focus for each color. Condensing lenses have a more distant focus for the red rays, which are the least refrangible, and a nearer one for the violet rays, which are most refrangible. The foci for the orange, yellow, green, blue and indigo are between these points. The more convex the lens the more perceptible the chromatic aberration. By combining prisms which have different refracting angles, and are formed of substances of unequal dispersive powers, white light may be refracted without being dispersed. The same result is obtained by combining lenses of different substances, the curvatures of which are suitably combined. The images of objects viewed through such lenses do not appear colored. The phenomenon of refraction of light without decomposition through them is called achromatism, and the lenses, achromatic.

CHROMIUM—Cr = 52.4—A metal important on account of its combinations. Found as an oxide, in combination with oxide of iron. As a chromate of lead a very beautiful mineral. It is grayish white, very brittle, difficult to melt, and exceedingly hard. Non-magnetic, non-oxidizable in the air, does not decompose water even at 212° F. When heated to redness it absorbs oxygen and decomposes steam,

being converted into chromic oxide. The metal obtained by the reduction of chromic chloride by sodium occurs as a gray powder, easily attacked by acids, and takes fire when heated in the air. All the salts of chromium are poisonous. Antidotes—chalk or magnesia, diffused in water or milk; ferrous sulphate with soda; but even these are uncertain.

CHROMOUS CHLORIDE— Cr Cl_2 .—Chromous chloride is prepared by heating the violet-colored trichloride in a porcelain or glass tube to redness, in a current of perfectly dry and pure hydrogen gas. Hydrochloric acid is drawn off, and a white foliated mass is obtained which dissolves in water, causing a great elevation of temperature, yielding a blue solution which, on exposure to air, absorbs oxygen with extraordinary rapidity, acquiring a deep green color, and passing into a state of chromic oxychloride, $\text{Cr}_2 \text{ Cl}_2 \text{ Cr}_2 \text{ O}_3$. Chromous chloride is one of the most powerful reducing or deoxidizing agents known, precipitating calomel from a solution of mercuric chloride, and gold from a solution of auric chloride. With ammonia it forms a sky blue precipitate, turning red on exposure to the air.

CHROMIC CHLORIDE— Cr Cl_3 , or trichloride.—Obtained by heating to redness in a porcelain tube a mixture of sesquioxide and charcoal, and passing dry chlorine gas over it. Totally insoluble in water under ordinary circumstances, even at 212°F . It dissolves, however, and assumes the deep green, hydrated state in water containing an exceedingly small quantity of the dichloride. Great rise in temperature is evolved. The green hydrated chromic chloride may be easily formed by dissolving chromic hydroxide in hydrochloric acid, or by boiling lead chromate or silver chromate or a solution of chromic acid with hydrochloric acid and a reducing agent, such as alcohol, sulphurous acid, or even hydrochloric acid alone.

Oxides—Chromium forms five oxides.

Chromic Acid—See Acids.

Potassium Chromate— $\text{K}_2 \text{ Cr O}_4$ —See Potassium.

Potassium Bichromate— $\text{K}_2 \text{ Cr}_2 \text{ O}_7$ —See Potassium.

Lead Chromate— Pb Cr O_4 —Chrome yellow—See Lead.

CIRCLE OF LEAST CONFUSION—A term in optics to denote the nearest approach to an absolute focus of an oblique pencil of light after refraction.

CITRIC ACID—See Acids.

CLEANING DAGUERREOTYPES—Remove the plate from the mount and pass a camel's hair brush lightly over the surface; pour over it two or three times some alcohol, and then plunge the plate in a solution of pure cyanide of potassium, 10 to 15 grains, the latter amount if the daguerreotype is much tarnished, and rock it until the tarnish is all removed and the plate looks bright. This may take from three to seven minutes. Wash well in clean water, and finally with distilled water, and dry in the following manner: hold a corner by a pair of pliers, and with a spirit lamp warm the back of the plate, at the same time blowing with the breath without stopping until the surface is dry.

CLEANING FERROTYPES—To remove finger marks and other blemishes it is only necessary, if they are still wet after development, to wash well and rub the film with the finger lightly. If dry, rub the plate with alcohol and a soft rag.

CLEANING BATHS—Solutions used to cleanse and clean a negative or positive of any kind from stains of development. The following have been found useful with different brands of plates: Alum, 1 oz.; water, 15 oz.; citric acid, $\frac{1}{4}$ oz.; water, 36 oz.; chrome alum, $\frac{1}{4}$ oz.; citric acid, $\frac{1}{4}$ oz. Used after development. Wash off and immerse for three to five minutes. Wash and clear (fix): Alum, 1 oz.; citric acid, 1 oz.; protosulphate of iron, 3 oz.; water 20 oz.; should be freshly mixed. Saturated solution of alum, 20 oz.; hydrochloric acid (commercial), 1 oz. Immerse the negative after clearing (fixing), having previously washed it for two or three minutes under the tap. Wash well after removal from alum and acid. This bath will act very kindly with dry negatives that have become discolored.

CLEANING OLD NEGATIVES—Dissolve several ounces of common washing soda in two gallons of hot water. In this put the plates and leave them for 24 hours. At the end of this time many of the films will have disappeared. Those still adhering can be easily removed by using an old tooth brush. After they are denuded of the old films put them in hot water, to which add a small quantity of hydrochloric acid; let them soak for an hour and transfer them to pure hot water for another hour, after which they will be clean and can be placed on edge to drain and dry.

CLICHE—The impression or cast formed by plunging a die into metal or other substances in a state of fusion—a matrix. Photographically, negatives and moulds used in photo-mechanical printing are termed cliché.

(To be continued.)

BOOKS AND EXCHANGES.

PHOTOGRAPHIC OPTICS. W. K. Burton. Scovill & Adams Company, New York. Pp. 1-110. \$1.00. Paper.

Just as we go to press we receive from the publishers the above book by Professor Burton. A hasty reading fully demonstrates the value of the work, which treats of such important subjects as "Light," "The Formation of the Image," "Lenses," "Focus and Aperture," "Rapidity," "Testing Lenses," "The Swing Back," etc., all treated in Professor Burton's usual thorough manner.

THROUGH RUSSIA WITH A KAMARET. Thomas Stevens. The Blair Camera Company, Boston, Mass.

This is an advertising pamphlet designed to show the capabilities of the new hand camera, the Kamaret. It contains several interesting illustrations, and the text is pleasantly written.

We have received a neat and artistically printed pamphlet, entitled "Why You Should Use the Hetherington Magazine Camera," which contains two excellent 4 x 5 phototype illustrations of instantaneous work made with the instrument and very fully illustrated directions for operating it. The machine is built after plans that have been carefully worked out and tested by men who appreciate the needs of simple scientific movements for such instruments.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

From the Lysoen Company, New York, we have received sample bottles of the "Go-Wink" developer prepared by them after a formula prepared by Mrs. Jeannette M. Appleton. It is an eikonogen developer and works well. As to its keeping qualities we have as yet no data.

Barker & Starbird send a bottle of their "Our Own" combined toning and fixing bath for omega and albumen prints. Our trials have proved satisfactory.

THE WATKINS EXPOSURE METER.—This little cylindrical instrument about 2½ inches long by 1½ inches diameter is a very compact device for determining the proper amount of exposure, and is particularly valuable where a person is working one grade of emulsion. After the right exposure has been ascertained by experiment with one kind of plate, then all subsequent exposures can be accurately determined by this instrument, because it is based on the time the light acts upon an extra sensitive strip of paper. As the light varies in its actinic qualities continually, the instrument is capable of registering it at any time. At one end of the meter is a circular glass plate under which is exposed through a black disc a circular opening one-fourth of an inch in diameter. Half of this aperture is occupied by a bluish-tinted paper. Sliding under this tinted paper to one side of the meter is a strip of sensitive paper three-eighths of an inch wide, supplied from a small roll underneath, and is drawn forward by pulling with the fingers. Each time it is moved a fresh surface is exposed to the light, and at once turns dark according to the power of the light. It is necessary to observe the time it takes the light to turn the paper until its color matches the prescribed color. This is the starting point. For convenience, attached to the opposite end of the meter is a removable sliding cap attached by a chain ten inches long. It acts as a pendulum, and in case one has no watch it is designed to hold the meter in one hand and (with

the cap suspended by the chain) the cap is swung to and fro. Each double beat counts a second. Thus the time is found without a watch. Having found out the light element the rest is comparatively easy. The other points to be considered are the plate, subject, diaphragm, and distance, which have been worked out by experiment and the results noted down on six rings, each about one-fourth of an inch in width, between the two ends of the meter. Four of the six rings are movable and can be rotated. Each movable ring carries a pointer which projects over to the left on to the next preceding ring. On the first stationary ring is marked the seconds. If it takes thirty seconds for the paper to darken, all the four rings are rotated to the right until the pointer on the first movable ring to the left points to the figure 30 on the left stationary ring. The first left-hand movable ring is called A, the next P, the third S, and the D and E. This carries two pointers, one projecting in each direction to the right and left. On the right stationary ring is marked the exposure figures. The first left movable ring A has marked on it the sensitiveness of the plate in figures. If it is an Eastman film the figure 40 has been found to be right, so the second movable ring P is moved to the right till its pointer overlaps figure 40. On this ring P are the figures for the subject, one hundred having been found right for an open landscape. The ring P is now kept stationary and the other two rings rotated till the pointer overlaps the figure 100 on P. On the third ring marked S are marked the size of the diaphragms in terms of F the focus and of the united standard, also in accordance with the numbers 1, 2, 3, 4, etc. This third ring is kept stationary, and the fourth, D E, rotated until its pointer overlaps the figure marking the size of the diaphragm being used. When this is done the reverse pointer overlapping the extreme right ring points to the number on its surface representing the number or fraction of seconds as the exposure to be given. We tested the time it took to turn the paper on a clear, hazy day on the last of April, and found at 10.30 in the morning, when the instrument was directed towards the sun, ten seconds were required; when away from the sun towards the landscape, thirty seconds. Using an Eastman film with the sensitiveness marked 40, and stop in a Ross lens at $f=64$ united standard, an exposure of fifteen seconds would be required. From the conditions of the landscape this would, from appearances and experiments, be seven times too long. The instrument is at first somewhat complicated to look at, but is very easily managed as soon as it is understood. It is adapted for testing the printing qualities of negatives, for copying and lantern-slide making and enlarging, that is, as to the time of exposure. Should the trials show over-exposure, then the value of the second ring marked P should be changed and set to a higher number. Some guessing is required at first, until the real sensitiveness of the plate is known. The price of the instrument is seven dollars and a half. It is sold by W. B. Solomon & Co., No. 2 Burling Slip, New York, who are the agents for the United States and Canada.

PHAINOGEN, a new combination developer put up in small glass sealed vials by Dr. Charles L. Mitchell, of Philadelphia. One bottle of the salt dissolved in three ounces of water makes a complete developer, the color of which is somewhat dark, but is very effective. It is supposed to be a combination of eikonogen and hydroquinone, which is always vigorous and enduring. We congratulate the Doctor on getting up such a reliable and useful preparation for amateurs.

DARK ROOMS ON THE PACIFIC COAST.—Messrs. Hirsch, Kahn & Co., at 333 Kearney Street, San Francisco, Cal., who have made a specialty in catering to the wants of amateurs, have recently added to their premises several new and commodious dark-rooms, provided with all the requisites for easy manipulation and conveniences for the changing of plates. We understand amateurs are cordially invited to see and use these arrangements. It is a satisfaction to note the liberality of this enterprising firm, which will certainly add to their already increasing trade.

A SECOND PHOTOGRAPHIC CONTEST, proposed by the Wasp Publishing Company, of San Francisco, closed on April 1st. It was confined to lantern slides made by amateurs. Three prizes were awarded. We suppose it was very successful.

United States Photographic Patents

Issued in April, 1891.

APRIL 7th.

449,733—Instantaneous Photographic Shutters; T. R. Dallmeyer and F. Beauchamp, London, England.

APRIL 14th.

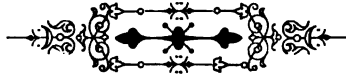
450,214—Camera; T. H. Blair, Boston, Mass., and J. H. Crowell, Vineyard Haven, Mass.
450,447—Device for Lifting Photographic Negatives; C. H. Buchwalter, Philadelphia, Pa.
450,475—Photographic Cabinet; C. Quartley, Baltimore, Md.

APRIL 21st.

450,794—Photographic Paper Roll-Holder; G. Jones.
450,815—Dissolving View Magic Lantern; F. McClintock.
450,963—Water-proof and Sensitized Photographic Mount; H. Kuhn.

APRIL 28th.

451,027—Slide-Shutter for Photographic Cameras; John R. Connon, Elora, Canada.
451,330—Annular Lens; Edward W. Laurencot, Hoboken, N. J.
451,413—Magic Lantern for Advertising Purposes; James W. See, Hamilton, Ohio.





NEGATIVE BY MRS. H. GRAY BARTLETT.

AT THE SPRING.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

BOSTON, MASS., JUNE, 1891.

No. 6.

Our Illustration.

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♦♦♦♦♦

The Development of Instantaneous Exposures.

BY W. H. BURBANK.

THE coming of the summer months brings to the editor of *Spectrum* the old, old question, "How shall I develop drop-shutter exposure?"

The hand camera has become so important a factor in modern photography that it cannot be ignored, and however much one may deplore the increasing tendency to make hand camera work most prominent in the photography of to-day, he must, nevertheless, recognize the claims of the hand-camerists to consideration, and do all in his power to advance the standard of hand camera work.

In what I shall have to say on the development of instantaneous exposures, I shall use the word "instantaneous" as expressing an exposure somewhat less than the normal time for the subject under the same conditions of lighting. In other words I shall concern myself only with cases of under-exposure, a class which by no means includes all the exposures made with a shutter. For such is the rapidity of our modern plates and lenses that it is easily possible to make an over-exposure even with a shutter. But the questions of my correspondents evidently refer to the difficulties in develop-



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ment caused by insufficient exposure, difficulties which they are not able to overcome and regarding which they desire information.

The authorities differ widely in the recommendations which they give for the treatment of this class of exposures, some advising a rapid development in a strong developer, while others counsel a wise moderation in the treatment of the plate. Every one to his taste; I shall merely give my own method of working and shall not quarrel with those who think that they have a better one.

It is evident, I think, that there must be a difference in principle between the development of an under-exposed plate and that of one which has received a normal exposure, a difference based on the difference of action between the two plates in the developer. As every one knows, the tendency of an under-exposed plate is to produce an undue amount of density in the high lights as compared with that in the shadows, because the developer intensifies the lights before the detail in the shadows is well out. It would seem, then, that a proper method of development for under-exposures should be one which would produce a gradual and uniform increase of detail and density over the entire plate, and, at the same time, be free from the danger of fogging the plate even under prolonged development. In brief, the operator must be able to produce the successive intensification of the negative and have no fear of fogging the plate by the prolonged development often necessary to bring out sufficient detail and produce good printing and general density.

In order to have complete control of the growth in density of different parts of the plate, a developer of moderate energy must be employed at the beginning, one that is gentle, not brutal, in the way in which it takes hold of the plate. In such a developer the high lights, which always appear first, do not become unduly dense and the shadows continue to gain gradually in detail and density. When they cease to do this, having, as it were, overtaken the high lights, the strength of the bath may be increased, either in pyro or alkali, or both, according as density, detail, or both are wanted.

By this method the development is slow, progressive, and energetic at the end where energy is wanted to give snap and vigor to the negative. In order to avoid fogging the plate the developer must not be so slow in action as to cause the development to be unduly prolonged, a danger which is in a great measure guarded against by strengthening the developer at the end. In order to reduce the above theoretical considerations to the level of practical work, I will now give my formula for a developer and my method of using it, without, however, seeking to claim that it is any better than many another. But it answers my purpose.

After some coquetting with other reducing agents, I have permanently attached myself to my early love, pyro in combination with the plebeian carbonate of soda, which has the advantage of cheapness and easy procura-

bility, points of no small moment. Of this I prepare a saturated solution of any desired bulk. The pyro solution is as follows :

Sulphite of soda,	4 drams.
Distilled water,	4 ounces.
Sulphuric acid,	4 drops.

Dissolve, and add

Pyro, 170 grains.

This solution has always kept well when in a well-stoppered bottle. To develop a half-plate, for instance, I soak it for a short time in four ounces of water to which two or three drams of the soda solution have been added, then thirty to fifty drops of the pyro solution are added. If the image is slow in appearing, or the detail hangs back, successive additions of the soda are made, and if, on the other hand, it appears too quickly and uniformly, the pyro solution is added in small quantities; just here lies the whole difficulty. By the judicious use of one or the other of the solutions, and with the exercise of a little patience, satisfactory results can usually be obtained without injuring the quality of the negative.

This is really all there is to my method of developing instantaneous exposures of the underdone variety, so simple as hardly to be worth writing about, but so certain as to be well worth a trial by those who have not a better one of their own.

Modern Methods of Illustration.

By W. H. BURBANK.

WOODBURYTYPE FOR AMATEURS.

IHAD not intended to include this process in the present series of papers owing to the fact that, as usually worked, it requires an elaborate and expensive plant, but Mr. W. H. Wilkinson has recently described a modification of the process in the columns of *Photography*, which seems to bring the process well within the reach of the amateur worker, and I have, therefore, concluded to give Mr. Wilkinson's method in his own words.

The apparatus needed is a drying box, in which to dry the sensitive tissue, three sheets of patent plate glass, 12 x 10, an upright grooved tin box to hold three plates, 15 x 12, fitted with a Bunsen burner underneath to warm the water in the box, three or four leveling stands, a thermometer, three zinc plates, 15 x 12, polished and leveled. The materials consist of gelatine, Nelson's No. 2 photographic, bichromate of ammonia, india-rubber solution, benzole, methylated spirits of wine, and plain collodion.

The drying box is merely a shelf fitted with three zinc trays, each tray about two inches deep by $12\frac{1}{8}$ x $10\frac{1}{8}$ inches inside, with a small ledge at each corner to rest the plate upon, so that the plate will serve as a lid to the tray,

the back of plate being flush with the top of the tray. These trays are half filled with chloride of calcium, and are placed in the box, one on top of the other.

To make the sensitive tissue, first of all polish the thin patent plates with French chalk, coat with plain collodion in the usual way, and when this has set immerse in clean water until the ether and alcohol are washed out, this result being attained so soon as the water flows evenly, and without greasy looking marks. The tissue compound is composed of :

Gelatine, Nelson's No. 2,	5 ounces.
Bichromate of ammonia,	600 grains.
Sugar,	1½ ounces.
Water,	12 ounces.

Place the gelatine and water in a clean jar and allow to stand until the gelatine is quite soft, add the sugar, then put the jar into a pan of cold water, and on a gas stove gradually raise the temperature until the gelatine is dissolved, then add the bichromate in a fine powder, and stir with a glass rod, add sufficient of finely powdered indigo to just tint the gelatine, then churn well with an egg beater.

Adjust the three polished glasses on the leveling stands quite horizontally, then into a beaker pour four ounces of the gelatine mixture, tie over the mouth of the beaker a piece of fine muslin, and pour the gelatine upon the plate, beginning in the center; do the same for the other two and allow the gelatine to set.

See that the three trays in the drying box have each a good layer of calcic chloride, then when the gelatine has set quite hard, lift the plate from the leveling stand and put it face downwards in the tray, the ledges at each corner preventing the gelatine film from touching the chloride. As each plate is put into the tray, place the tray in the box, and as the last one goes in close the box and leave it for forty-eight hours, by which time the chloride will have absorbed the water from the gelatine and dried the film, which, after being allowed to stand in the dark-room for a little time, can be stripped off the glass and it is ready for exposure to light.

The indigo should be bought, ready ground up, from a good maker of artist's colors, its function being merely to prevent the action of light from spreading laterally.

The tissue is exposed under a good transparent positive, in which is all the detail in lights and in shadow that the original negative is capable of yielding. The transparency must be bright and vigorous; if at all flat or fogged, it will be useless. The outside of the picture must be masked, as, if the tissue be exposed to the very edges, the process of development will be a failure. A box printing frame should be used so as to get a great plenty of even pressure; the collodionized side of the tissue is placed in contact with the film of the transparency. The exposure is very short and should,

when possible, be made to direct sunlight, a Johnson actinometer being used to gauge the time, a good carbon transparency requiring on an average five tints. During the exposure the printing frame should be exactly facing the sun, or the print will be likely to be out of focus.

Before exposure the three zinc plates should have been polished and coated with a thin film of india rubber, allowed to set thoroughly on the leveling stands, the india-rubber solution being made by dissolving a little of the rubber solution, sold in tins by makers of mackintoshes, in benzole. This operation requires about twenty-four hours to effect, the solution having about the consistency of collodion. These plates may be coated in advance as they require over a week to get too dry for use.

The tissue being exposed, and the film of rubber perfectly set, lay the zinc plate on the bench, india rubber side uppermost, take a roller squeegee in the right hand, put the edge of the exposed tissue in contact with the film of india rubber, and then, with a heavy pressure of the roller, press the tissue in contact with the film of india rubber, taking care not to allow the tissue to touch the india rubber film in advance of the roller. The collodionized face of the tissue is in contact with the india-rubber film. Let the roller press the tissue in contact with the rubber film at the margins, then with a soft brush apply some thick india-rubber solution all round the edges, so as to prevent the water from getting underneath the tissue; let this india-rubber solution set, then sprinkle liberally with French chalk, which will absorb the last remnants of soft rubber, and place the plate in the developing tank containing clean water. At once light the gas underneath and raise the temperature gradually to one hundred degrees Fahrenheit, at which it must be kept for at least eighteen hours, at the end of which time the gelatine, not acted upon by light, will be dissolved, leaving a relief in gelatine on the zinc plate. After a rinse under the tap, the plate is put in a rack to drain, and when thoroughly drained it is immersed in a tray of clean methylated spirit, in which it is allowed to remain for an hour or two, so that the spirit can absorb the whole of the water; from here it is transferred to a draining rack, where it remains until the relief is quite dry.

The next operation will be to get a cast in fine plaster of Paris, for which purpose the plate is laid face up on a level table, the relief surrounded with strips of wood one inch high, each of the strips exactly the same height and thickness of the others.

The plaster used must be of the very finest kind, and should be passed through a sieve of coarse muslin; pour the plaster into the water, stirring vigorously, and when of the proper consistency pour over the relief, passing a long-haired stiff brush over relief in gentle strokes, so as to prevent the formation of air bells; level the back with a glass plate, removing it before the plaster sets, and allow the cast all night in which to set.

Remove the side sticks, then lift the plaster cast gently away, and care-

fully examine the cast for air bells ; if any are present, another cast must be made ; but if none are present, put the cast away for an hour or two to allow the surface to get dry and hard, then with a soft brush dipped in fine plumbago, gently polish the surface, finishing with a clean brush, so as to be certain of removing all loose particles of plumbago.

From this cast another is made in Spence's metal, the plaster cast being fixed inside of a cast-iron box in such a manner that the metal cast is of a definite thickness, and with perfect parallelism between the front and back. For this cast nothing is better than an ordinary typographic casting box, the side gauges being just double the usual thickness.

The press in which the prints from the stereo mould are made need not be of a very elaborate construction : a wooden tray, 13 x 11 inches, and half an inch deep, with strips at each corner one inch high, to act as guides for the platen. The platen is a piece of wood two inches thick, made to fit inside the guides, and in the under surface of this box a piece of thick plate glass is let in, about one-eighth of an inch, and cemented therein by means of a mixture of gold size and red lead ; a couple of ordinary box handles on each end of the block will complete the press, with the exception of a sheet of sheet rubber or gutta-percha at the bottom of the tray, in which to imbed the stereo mould, which is done by softening the gutta-percha with hot water, putting the mould in the center, and putting the platen in place with a seven pound weight in its center. The ink is composed of :

Gelatine,	2 ounces.
Water,	14 ounces.

The coloring matter being composed of Newman's color for carbon printing.

The precise strength of the gelatine cannot be given, as each sample of gelatine differs from another, and the proper strength can only be attained by experiment and trial. The gelatine is soaked in the water until quite soft, then dissolved, the pigment being added and thoroughly incorporated. It is then strained through muslin and poured into a wine bottle, which is kept in a pan of warm water until required. The paper to be used may be a good sample of dull enamel, chromo-litho paper, such as Dickinson's art paper.

To print, the stereo mould is fixed in place upon the gutta-percha bottom, then rubbed over with a rag dipped in olive oil and carefully wiped ; a pool of ink is then poured in the center of the mould, a piece of paper a little larger than the mould is then placed over the pool of ink, the platen is at once put on and the weight on top, and allowed to rest about five minutes, when the weight and platen are removed and the print lifted from the mould. Now if the high lights are tinted, the pressure is not sufficient, or the ink contains too much gelatine, if the whites are clear, but the picture is heavy, the amount of pigment is too great and must be reduced by the addition of more solution of plain gelatine.

The prints are laid away to dry, after the superfluous ink has been scraped from the edges, and which is returned to the melting pot to be used again after straining. When the prints are dry they are soaked in a weak solution of alum, then rinsed in cold water and again dried.

The following points must be carefully observed; the sensitive tissues cannot be dried in any other way than over calcium chloride; if dried in a room it will be quite insoluble when dry, and consequently useless:

When the tissue is dry do not attempt to strip from the glass directly, but allow it to stand a short time.

Do not remove from the calcium box until an hour or two before exposure, as once the gelatine gets at all damp, insolubility sets in and cannot be checked.

The plate upon which the exposed tissue is developed must be quite flat, the plaster mould must be of sufficient thickness to preclude the chance of buckling when drying, and the stereo mould must be made carefully to keep the surface level.

The platen of the press must be flat, and the weight used must be put in the center, where possible a lead backing to platen is advisable.

A copying press can be used as a press, in which case the tray alone, without guides, will be used with a thinner plate-glass platen to take the pressure.



Notes on the Photographic Conference.

BY F. C. BEACH.

THE first annual meeting of the members of the American Photographic Conference was held in New York, at the rooms of the Society of Amateur Photographers, in Thirty-Eighth Street, on Tuesday, May 26th, and continued until the evening of the 28th. The attendance from out-of-town delegates was not large (about twenty-five to thirty attending) and these were mostly from near-by clubs. Cincinnati and the West were represented by Mr. George Bullock and Mr. C. Gentile on behalf of the Chicago Camera Club and Photographic Society of Chicago.

At a preliminary meeting of the council the action of the Secretary in making a contract on his own account with a newly started semi-photographic book review journal, to be the official organ of the conference, and conducted by himself, was ratified. From what was made known no liberal policy as regards the rest of the photographic press is to be pursued, which will very likely narrow the influence and scope of the organization, much more than the original promoters imagine. Liberality, as regards the rapid dissemination of photographic information throughout the photographic world, it seems to us, is one of the first essentials of any association that pretends to be national in character.

The conference convened at 10.40 A.M. on the first day, the chair being occupied by President Dr. Ely Van de Warker. In his report the secretary stated that thirty-two organizations belonged to the conference, the total membership of which amounted to one thousand three hundred and twenty-two, and might be larger. The President then made an address of welcome, outlining the good effect associating with his local club had had on him in broadening his knowledge of the art, and felt sure a similar benefit would result on all who attended the conference. Not only the amateur but the man of science finds ample labor full of reward in the domain of photography. It is a broad science, covering many applications and uses, several of which have but just begun to be made known.

The conference, while experimental, was designed to be in touch with the clubs, and its success would largely depend on the work of their representatives. He referred to the great work done by the American Lantern Slide Interchange in securing excellence in lantern-slide making, and in bringing different organizations into sympathy with each other. By testing the slides in advance only those that are of good quality are submitted for exhibition. Based on a little different plan he suggested that the associations now in the conference create circuits of interchanges of slides among themselves, each circuit changing to another until all the work has been seen by the different clubs. As a rule amateurs are likely to work in a single groove, unless stimulated by seeing others work. It would even be desirable to have frequent exchanges of pictures among the different clubs, which would have a tendency to bring them into closer alliance with each other, and the conference. Since the movement was inaugurated last winter he had noticed many friendly criticisms.

He disclaimed any idea of creating a special class, all photographers were welcome to enter the conference and enjoy its benefits. The constitution was still a matter of experiment, and would doubtless be changed to suit any suggested improvements. All were advised to work loyally in the interests of photography, and no higher symbol was necessary. Faith in the work was also an essential element.

The minutes of the February council meeting was read and approved. The treasurer reported that \$345 had been received, and \$117 expended, leaving a balance on hand of \$227. Mr. Pancoast asked that his name be withdrawn, as he expected to leave Waterbury, but no action was taken. It was then voted, the secretary being instructed to cast one ballot, to re-elect the old officers. They are Dr. Ely Van de Warker, President; George Bullock, First Vice-President; Dr. George Parmele, Second Vice-President; W. H. Drew, Treasurer; and T. J. Burton, Secretary. The election of a new council was postponed, a special nominating committee being appointed to report on the last day of the session. An invitation was read by Mr.

Bullock asking that the conference be held next year in Cincinnati, which was referred to a committee.

The routine business having been completed the conference listened with interest to a paper on "The Requirements of the Modern Photographic Society," by Mr. C. R. Pancoast. He gave many practical hints; recalled the days when it was necessary to swelter in a small dark tent to develop the plate, if one was traveling, contrasting it with the array of "You press the button, we do the rest" photographers, which has now reached mastodonic proportions. He recommended the providing of an attractive meeting room, and well equipped dark-rooms. It was not always necessary to bring some new novelty before a meeting to make it interesting. Sometimes the asking of a trivial question would start a discussion which would probably prove to be unexpectedly instructive, since different photographers had varied ways of looking at a seemingly commonplace subject. It was also necessary to have some one, of large experience in photography, act as a leading spirit; nothing could be done without the aid of hard workers, and usually in societies these were scarce.

Frequent exhibitions are desirable, and it should be insisted upon that the entire work be that of the exhibitor. Beginners should be encouraged to show their work and ask questions. He believed a society should be open to all photographers regardless of whether they are amateurs or professionals. Was decidedly opposed to the selling of work by members. Regarded continual rounds of lantern-slide exhibitions as one means of keeping up the interest in the association. Field days were also advisable and occasional lectures by artists and scientific men would greatly aid beginners and be instructive to all.

In any association some few must be willing to put their shoulder to the wheel and do the work. Virtue must be its own reward.

A brief discussion followed in which Mr. Bullock said the position in regard to the amateur by Mr. Pancoast agreed with his idea.

Dr. Van de Warker thought it very proper to require that the amateur do all the work, for in no other way could he learn to do proper work. He was in favor of admitting professional photographers to membership when they were not connected with any trade concern.

Another member argued that to do all the work would require that the plates be prepared by the amateur, but others thought that was going further than necessary. Still another suggested that many only succeeded in getting as far as the negative and lacked the time to make prints. The printing he considered a mechanical matter, and good pictures should not be left out of an exhibition on this account. Such prints could be admitted if properly labeled.

Mr. Pancoast alluded to the rule in the present American Lantern Slide Interchange which permits a certain per cent. of professionally made slides

from amateur negatives to be admitted. He thought the rule was wrong, and, was in favor of exacting that both the negatives and slides be made by the same person. It was a proper subject for a Lantern Slide Committee to consider and work out.

At the afternoon session Dr. A. Clifford Mercer, of the Syracuse Camera Club, explained a large number of excellent micrograph lantern slides which were shown in the New York society's lantern. He read a short paper on "Photo-micrographs."

In the evening at the Fifth Avenue Art Galleries Mr. Wallace Goold Levison, of the Brooklyn Academy of Photography, entertained the delegates with his revised lecture on "Instantaneous Photography as an aid to Science, History, and Art," illustrating it with a large number of lantern slides. His first slide was a picture of a flash-light lamp taken just as the flash went off, and was remarkably good. We learn that a number of trials were made before a successful negative was obtained.

His lecture covered a variety of subjects, such as methods of ascertaining the speed of shutters, astronomical photography, medical photography as applied in photographing the movements of the vocal organs, the photography of self-luminous objects, like fire-works, animals in motion, athletes in motion, studies by artists who get their ideas from hand-camera pictures. He explained how an artist obtained his material for representing a riot scene in a Western town, by showing first the picture as completed, then the several detailed positions of one or two individuals (supposed to have been in the original) taken with a hand camera on the roof of a city house.

The hand camera was continually being used by artists as an aid in their work, and was becoming of greater utility as the years advanced. He was loudly applauded at the conclusion of the lecture.

The next day, Wednesday, at the morning session, Dr. Ely Van de Warker read a paper on "Photography in the Marine Tropics," in which he outlined the experiences one must put up with in such climates.

A new council was elected, composed of the same gentlemen as the previous one with the exception that Miss Frances B. Johnston, of Washington, D. C., was elected in place of Mr. R. Dickinson Jewett, and Wm. B. Halsey in place of Professor Weston, of Newark. Other changes were made. Much discussion occurred on the proposed New Lantern Interchange and a committee was appointed to devise rules and regulations.

In the afternoon, at 1.30, after some error on the part of the steamboat company, a large crowd embarked on board the steamer "Laura M. Starrin," at Pier 3, North River, and started on a trip around the harbor. First a tour up the North River was made, then the Statue of Liberty was photographed, and later, steamers in the lower bay, the return being by the East River to Hell Gate and return to West Thirty-Second Street pier where a landing was made at five o'clock in the afternoon.

There was a remarkable collection of cameras, all sizes and kinds. A very good dark-room was provided for the changing of plates.

In the evening the delegates were royally entertained by the Brooklyn Academy of Photography in Brooklyn, at the Criterion theatre, with a special exhibition of lantern slides, and a plate, showing colors, prepared by Professor Lippmann, of Paris, was shown, it having been sent to the academy by Mr. Frank La Manna.

On the morning of the third day a meeting of the council preceded the regular conference, at which committees were appointed for special purposes. The first business of the conference, which was quite slimly attended, was the presentation, by Dr. Clifford Mercer, of the name of Dr. R. L. Maddox, of England, as the first honorary member of the conference on the ground that he first used the gelatino-bromide plate, and practically was the originator of those now on the market.

Professor Lippman's name was also proposed by Harry S. Fowler, as an honorary member, because he had presented to the conference the second colored plate ever made by him. The rules were suspended and both gentlemen were elected. Mr. Fowler exhibited the plate in a small blackened box, provided with a slide at the top and bottom, so that the plate could be viewed on each side or by transmitted light.

Mr. Fowler read an extract from a letter sent by Mr. Frank La Manna, from Paris, bearing on the subject which is of some interest. He writes:

The image of the spectrum now shown is a direct positive, and it is obtained by processes as beautifully simple as they are scientifically exact; a beam from an electric arc light (in this instance of twenty-five amperes) passed successively through a condenser, a water bath to divest it of heat rays, a direction vision prism with slit of about two millimeters, a lens reducing the system to parallel rays, a double convex lens to reduce the image, and the spectrum is then focused for average intensity of color upon the usual ground glass.

The film, which is to receive the image, must be structureless and sensitized uniformly; that is, it must be transparent, or at least only slightly opalescent and free from the grainy texture of the usual commercial emulsions. The ordinary wet plate well washed fulfills these conditions. Professor Lippman has experimented successfully with gelatine, albumen, and collodion as films, and either iodine or bromide of silver as sensitizers.

The plate is placed film side in against a U-shaped piece of rubber, a piece of ordinary glass is placed against the other side of this U, and the three are firmly clamped together, making a sort of trough, two or more millimeters through, which is filled with quicksilver. The film and the metallic mercury are hence in contact. This trough is substituted for the ground glass in the camera, the sensitive film is in the plane of correct focus, a sufficient exposure is given, and the plate is developed in the usual manner. The brightness of the colors depends in great measure on the whiteness of the silver deposit. These colors do not appear until after the plate is dry.

Needless to say that these operations are carried on by a safe light, as the electric light is contained in a light, tight box, from which the beam issues through a shutter or door when needed. This particular specimen is an albumenized collodion film, sensitized in a ten per cent. nitrate of silver solution. The entire field of the spectrum is exposed for three minutes without any interposing color screen. The total distance from light to plate is about one meter. It was developed with pyrogalllic acid and sesqui-carbonate of soda until the entire surface of the spectrum was well brought out, which required about

five minutes' time, fixed in usual hypo solution, very carefully and thoroughly washed, and the result is the exquisitely beautiful band of colors before you.

The principle of this production is explained by Professor Lippman as follows: During exposure the beam of light has passed through the glass supporting the film, through the transparent film itself, and then reflected from the surface of mercury in contact back through the film, the reflected rays colliding, if I may so express it, with the incident rays and forming fringes of interference, that is, at those points within the film where both incident and reflected rays are in the same phase or direction of vibration a maximum effect of light is produced. Per contra, where the rays are in opposite phases vibration is annulled, obscurity results, and there is absence of effect. The result on development is a series of infinitely thin laminae or strata, with planes parallel to the surface of the film, each in thickness half a wave length of the color which produced them, and this same distance apart one from the other. In a film, say one-twentieth of a millimeter thick (one-five-hundredth of an inch), over 150 of such layers would result from the red ray, 220 from the yellow, and 250 from the violet. The colors, therefore, are not as pigments; they are but the decomposition of the white light by which the plate is viewed, and are analogous to the play of color upon a soap bubble or the iridescence of mother-of-pearl.

Dr. Mercer then exhibited a Woodburytype lantern slide which showed decided colors. He thought the Alpha slide plate showed less granulation than any other, and might be adapted to Professor Lippman's work.

Mr. Gentile, of Chicago, called attention to the need of some action if photography was to be represented as a separate department at the Chicago World's Fair. As a result of the suggestion, Mr. Gentile, Miss F. B. Johnston, and Dr. Ely Van de Warker were elected a special committee to take the matter in charge. Committees on papers, publications, exhibitions, foreign relations, and the custom house, were appointed, and Mr. T. J. Burton was elected editor of the *Conference Journal* with Miss Frances B. Johnston, of Washington, D. C., as associate editor.

Mr. Oscar L. Teale, President of the Plainfield Camera Club, read an exhaustive paper, accompanied by lantern slides, on "Stereoscopic Effects with the Optical Lantern."

A paper was presented by Prof. Charles Dury on "Photography as an Aid to the Study of Natural History." It was voted to hold the next annual meeting in New York during the latter part of May, 1892, with an exhibition of prints.

On Thursday evening the Inaugural Conference Dinner took place at Clark's, in West 23d Street, and was well attended. Over thirty covers were laid. After the inner man had been satisfied, brief remarks were indulged in by the President and others, that were instructive and entertaining. The President's thought was, that though the beginning that had been made might seem small, yet the work the conference could do was to encourage specially the scientific and art phases of photography. In this it was perhaps different from other associations. Dr. L. H. Laudy made amusing comparisons concerning the dry plate.

Dr. Charles Ehrmann emphasized the need of greater attention by judges of photographic exhibitions in regard to the technical merits of photographs

rather than their artistic excellence, and alluded to some fine work in the Fifth Avenue exhibition which had been passed over by the judges.

Prof. Randall Spaulding disagreed with the last speaker's views—young photographers were rapidly acquiring technical proficiency, what was needed was the cultivation of the art perceptions, the making of pleasing photographs. These he thought deserved higher recognition at the hands of the judges.

Mr. C. Gentile, of Chicago, was pleased to note the high standing of the conference, and thought from what he had seen that it would in the future exert a more potent influence than any other national association. The annual exhibition of photographs was the finest he had seen. He believed that photography should have a separate department by itself at the Chicago World's Fair; so far nothing of the kind had been provided for, and it would certainly be the province of the conference to urge recognition. He thanked the gentlemen for their courtesy and regarded the conference as full of promise for good.

Mr. C. W. Canfield spoke of the benefits likely to arise from the action of the conference, and urged the marking, by some sort of memorial tablet, of the buildings in New York where daguerreotypes were first made. Afterwards brief addresses were made, the intervals being enlivened by music and humorous recitations, by Mr. C. P. Daley, after which, at a late hour, the dinner broke up.

In giving these extended notes we have endeavored to do justice to the proceedings, and to state impartially the impression generally conveyed, as set forth by the representatives of the conference. We fail to notice any new or broad ideas, and regret that measures were not adopted for making it more of a national organization, by allowing others than members of clubs to take active part in its management.

We understand that the suggestion of establishing a Central Purchasing Bureau has been abandoned, but in place of it, it is proposed to establish, at each annual meeting, a special trade or stock exhibit about on the plan of the National Association of Photographers.

The Amateur Abroad.

BY ROBERT E. M. BAIN.

TRAVELING abroad is, at the present period, but a comparatively slight undertaking. A few words to the local steamship agent secures the room and a week or two later you are off on the deep blue ocean with less effort on your part than a few years ago would be expended in going from St. Louis to New York. Still to those, who have not had the time to spare for such a pleasure trip there is an impression that traveling in foreign

countries is attended with a great many annoyances and discomforts, one of the principal of which is looking after your baggage. The latter is a difficulty as easily surmounted abroad as at home, and upon landing the tourist is astonished at the ease and facility with which he is initiated into foreign customs and manners.

The railway and steamship company's employees are trained by long experience to do what is necessary with as few words and in as short a time as possible, and the traveler finds almost before he is aware of it that his wants and needs have all been anticipated with no effort on his part. Baggage is not checked it is true, but every coach has its own baggage compartment and, with a guard to each car, parcels are rarely mislaid or misdelivered.

In the matter of "tips" or fees to attendants, facts are greatly exaggerated. A penny or two to the porter who hands you into the compartments you have engaged, looks to your parcels and attends to the labels and other incidentals, is all that is expected, though even this is not necessary and rests entirely with yourself. While abroad this last winter, the writer carried with him in addition to his $6\frac{1}{2} \times 8\frac{1}{2}$ camera, tripod, etc., a case containing nine dozen Cramer lightning plates. This would look like a very formidable addition to one's luggage, as the case and plates alone weighed over fifty pounds, yet except to make exposures in the camera and to change plates in the holders at the hotel these things were handled entirely by the hotel and railway attendants. The idea that it is necessary to confine one's self to a steamer trunk and a hand camera is an erroneous one, and a single trip will prove it. At the hotel, either in England or on the Continent, the porter will handle the luggage, and, while viewing, the guide will take charge of the camera during the trip, or for a few cents a servant can be secured for the entire day. In England the tourist is free to make views at all times and places, and the residents are usually very kind in allowing the amateur to invade private premises to secure a coveted picture.

On the Continent, however, it is somewhat difficult to gain permission, as the local authorities are very particular and the presentation in advance of a passport accompanied by a written request to the proper authorities is usually necessary. In Paris, Berlin, and most of the principal cities, it usually takes a week or more to obtain the coveted permit, but once obtained the photographer is free to roam about at will, avoiding only the fortifications and barracks, the photographing of which is prohibited. Of course, where a hand camera is used, it is not necessary to go to the trouble of getting a permit, but the advantages of the large negatives is so obvious that it is not necessary to relate them. Custom officers are very lenient, both abroad and at home, with photographers, and it is seldom one is requested to unpack his outfit. Going into France from England they ask very few questions, and returning the officers are on the lookout only for cigars and brandy. At New York the officials are very kind, and the tourist is usually both surprised and

gratified to see how easily he gets through. The complainant in these matters is usually some "smart" tourist who tries to conceal a few things that would not be thought worth noticing by the officers ordinarily, and thus by suspicion subjects his packages to thorough examination. The writer secured in two days' residence in Paris twenty $6\frac{1}{2} \times 8\frac{1}{2}$ negatives which he would not exchange for two hundred $3\frac{1}{4} \times 4\frac{1}{4}$ pictures. It looks like a big undertaking to carry a large outfit but the trouble lies mainly in a too vivid imagination.

ENGLISH NOTES.

BY THOMAS BOLAS.

Seeing and Photographing by Telegraph.—The *British Journal of Photography* devotes a series of three articles to a review of our present state of knowledge on this subject, and makes reference to a little book on the problem, which has been recently published by Herr Liesegang, son of Dr. Liesegang, the well-known photographic expert of Düsseldorf. The *British Journal* points out that nearly forty years ago Bakewell solved the problem of transmitting a specially made writing or sketch by telegraph, the sketch being made on tin-foil with varnish, the varnish lines serving to break the electric current passing between a style and the tin-foil, and the image being received on acid ferrocyanide paper moving synchronously with the original. In this case the original may be a photo-bitumen image on the tin-foil. The transmission of a camera image may also be regarded as almost practicable provided that sufficient time can be allowed for the transmission. A selenium cell, the resistance of which diminishes on exposure to light, can be placed in circuit with a battery and relay, the relay being so constructed that the relaid current shall be proportional to the initial current and shall pass through an incandescent lamp of suitable resistance. Now let us suppose the selenium cell to be passing in regular lines over the camera field, and the sympathetic incandescent lamp to pass synchronously in corresponding lines over a corresponding area, an arrangement quite possible to make. This latter area, over which the lamp travels, is supposed to be the field of view of the receiving camera. When the selenium cell is in a bright part of the original field, the lamp will be in a corresponding part of the second field, and will be bright in proportion to the light shining on the cell; it is then obvious that in time the whole scene will be impressed on the sensitive plate. The problem of so arranging an apparatus that the receiving field shall show at one time the complete scene depicted by a lens on the transmitting field, is a much more difficult problem, one that the solution of which must be looked on rather as barely possible than as practicable in the present state of our knowledge. We can, however, suppose that the solution may depend on some system by which a number of selenium cells are packed closely together over the area upon which the lens of the trans-

mitting camera projects its image, while the receiving area is a closely packed mass of minute incandescent lamps, each sympathetic with the selenium cell in the corresponding part of the transmitting surface. Under such circumstances the receiving surface, which one may suppose to be the proscenium of a theatre, would show in degrees of light and shade the original picture, with objects in motion. What tends most to make such a system look visionary and impracticable is the enormous number of line-wires required, and the complication of a relay system for each. It is calculated that to transmit in this way a particular subject, a view of the Liverpool Photographic Exhibition would require no less than 490,000 line-wires and separate systems if the degree of definition were to correspond to that in a photo-block print, issued with the *British Journal* on March 20th, in which print 490,000 approximately represents the number of dots. Mention is, however, made of an ingenious system of cross connection, by which Herr Liesegang proposes to reduce the number of conducting wires to twice the square root of the number of receiving organs when the group is square, or to the sum of the organs along two sides of the figure when the group is oblong. Herr Liesegang's system would appear to involve the use of some form of transmitting organs in which light itself initiates an electric current—some form of photo-electric cell in fact—and there are many such arrangements known.

Lippmann's Chromo-Photographic Experiments.—A very remarkable production was shown at a recent meeting of the Photographic Society, as a photograph of the spectrum by Professor Lippmann. Careful observation revealed a nearly square patch of reddish iridescence, and each side of it a similarly shaped patch of greenish iridescence, one of these greenish patches being more strongly marked than the other. Those present could, under these circumstances, hardly look on it as a photograph of any part of the spectrum, as in the spectrum the red and green do not come close together, and moreover there is not green each side of the red. Dr. Lippmann has made experiments of some interest in themselves, but experiments having no direct bearing on the problem of photography in colors; but the unfortunate circumstance is that a lady reporter, who in Paris represents one of our daily newspapers, sent over an account which led the general public to suppose that Dr. Lippmann had done far more than he professed to have done.

The New York Exhibition.

By F. C. BEACH.

FIRST NOTICE.

AFTER an interval of two years the fourth of the joint annual exhibitions agreed upon by the Philadelphia, New York, and Boston societies opened most successfully, May 25th, under the auspices of the Society of Amateur Photographers of New York, at the Fifth Avenue Art Galleries, 366 Fifth Avenue, and closed on Saturday evening, June 13th, one week

longer than was expected. It was a notable exhibition, especially in the abundance of artistic work displayed. It also illustrated very plainly the remarkable change that is taking place in printing processes, and the public liking for mat surface pictures rather than those of high finish. There was a greater display of foreign work, of superior quality to that shown at any previous exhibition. Exhibits were received from such distant countries as India and Australia, while the Holland Amateur Society of Amsterdam sent a large separate exhibit. England and Ireland contributed the greater share of foreign work.

A departure was made in the catalogue by enlarging it and adding photogravure illustrations of pictures in the exhibition. It was successfully completed and printed when the exhibition opened. Seldom has any catalogue been more complete and unique than this, and it will be prized as a souvenir of the exhibition.

The plan pursued by the committee in hanging was to locate the work of the Philadelphia Society and Boston Club on one side of the gallery, the New York Society on the opposite side, and the principal foreign exhibitors between the two, at the further end of the room, appropriating the space in the annex gallery to non-members of the three organizations, and to additional foreign exhibitors.

We can only at this time refer to a few of the exhibits. Those that strike the eye most prominently as we enter the gallery on the right are the six splendid photographs, by W. H. Jackson, of Denver, Col., representing the Palisades on the Hudson at Dobbs Ferry (a panoramic view); two views in Florida; an artistic view on the Harlem of the great bridges; and two excellent representations of Mexican architecture. Adjoining this are the tasteful exhibits of Miss Catherine Weed Barnes and H. M. Grisdale. In one large frame Miss Barnes has seven figure studies illustrating "The Songs of Seven," done in platinotype. Several are very artistically posed. A few other frames show excellent interior work, and such sketches as "Cinderella," "Song of the Shirt," "Study in White," and views of the exterior and interior of her studio display good judgment and fine technical skill.

Dr. P. H. Mason, of Peekskill, N. Y., shows four frames of panoramic pictures on the Hudson, near Peekskill, produced from separate 5 x 7 negatives, but printed with remarkable skill in a special frame, devised by a member of the Peekskill Club, so that the juncture is entirely obscured.

Mr. Alfred Stieglitz exhibited a number of frames of platinotype work, exceptionally well done, which will receive further comment hereafter. His portrait of Dr. Vogel is a masterpiece of photographic work.

Dr. John T. Nagle had one large frame, holding forty views of Texas ranch life, printed on gelatino-chloride paper, that were interesting. Mr.

Charles H. Davis makes a large display of figure work, having them framed rather conspicuously. But the posing of several figures was artistic and attractive.

Miss Emilie V. Clarkson showed a number of frames of good work, particularly in her treatment and lighting of groups and single figures. Mr. Charles I. Berg was also fortunate in contributing two frames of gracefully posed figure studies.

In the Philadelphia exhibit Mr. Clarence B. Moore made the largest display and had a variety of work. His single head, called "Flo," which took a diploma of honor at Philadelphia, was beautifully done. Some of his other frames contained novelties in grouping, rather grotesque than artistic. Mr. Robert S. Redfield took the lead on American platinotypes, which were well rendered and beautifully printed. His "Mending their Ways" was much liked and is illustrated in the catalogue. Mr. John G. Bullock, Mr. C. R. Pancoast, Dr. Charles L. Mitchell, and Mr. Alfred Clements, all sent photographs of high order, which will be noticed hereafter.

In the Boston exhibit Mr. H. A. Latimer contributed the largest number of frames, covering several excellent bromide enlargements made from his negatives. He has photographed in nearly every branch of the art, and what he does is carefully finished. Mr. Geo. H. Eaton is another large exhibitor of large figure studies taken in the Boston Camera Club studio. Several were excellent specimens of rapid portrait work. Mr. John C. Lee had some exquisite photographs of an Italian street boy, and Mr. H. N. Sweet sent two large frames of ruins in Yucatan that were very clear and especially interesting historically.

In the Annex Gallery, six frames by Prof. Henry A. Rowland, of mountain scenery along the Canadian Pacific Railroad and views in Alaska, were up to his usual quality in picturesqueness and skillful treatment; there were also some excellent composition studies by Mr. George A. Nelson, of Lowell, Mass. Mr. John H. Tarbell had several frames of pictures in Whitby, England, and two made-up photographs illustrating the "Song of the Shirt." The English views were the best. Mr. John E. Dumont also exhibited a few frames of original figure studies printed on a special paper which appeared to give the whites a yellowish tint. His work was as usual carefully done, but the subjects were not quite so attractive as heretofore.

Mr. James L. Breese showed several handsome gilt frames of platinotype portraits; a few were gracefully posed and artistically finished. At the end of the room was a single frame by Miss Frances Johnston, of Washington, displaying fine technical skill, especially in a few interiors. The portraits of the President's private secretary, Mr. Halford, of the late Secretary of the Treasury, Mr. Windom, and of the Secretary of the Interior, Mr. Noble, at work in their respective private offices, were exceptionally good.

Max Hansmann sent some very creditable work, mostly views about

Washington, D. C. Mrs. James Osborne Wright and Miss Madeline Smith both showed some clever, artistic work. The beautiful photographs of fruit (grapes) and flowers, actual size, by Mr. Edwin H. Lincoln of Cambridgeport, Mass., were splendid examples of technical work. Mr. Zybach of Niagara Falls sent four frames that were beautiful instantaneous photographs of that subject.

When we come to consider the foreign work it is hard to particularize, there is so much to admire. Such photographers as F. M. Sutcliffe, J. P. Gibson, H. P. Robinson, Mr. and Mrs. Anckorn, Harry Symonds, Richard Keene, A. G. Tagliaferro, Harry Tolley, F. P. Cembrano, Lyddell Sawyer, and Adam Diston furnish the bulk of the choice pictures, nearly all using the Blanchard silver platinum toned printing process, which produces very sketchy effects.

The instantaneous views by Louis Meldon were admirable, while the interiors of C. Court Cole were remarkable. Martin J. Harding contributed several beautiful hand-camera shots, as he calls them, in Conway Bay, North Wales.

What Mr. Cembrano has done in producing photographs that have more of an engraving effect and atmosphere than it would seem possible, will certainly convince the most skeptical photographer of the future possibilities of the art.

Mr. Lyd. Sawyer's large platinum prints of the "Boat Builder," showing a novel management of light, "Two's Company," "In the Twilight," and the "Smoky Tyne," are admirable examples of art photography.

The society was peculiarly fortunate in obtaining so many fine examples of the latest and best foreign work, and no amateur need have a better stimulus than these pictures to encourage him to reach the same degree of perfection.

Another innovation was the exhibition of strictly new apparatus. Four pieces were promised, but only three really exhibited, an electrical and a gas dissolving optical lantern, also a new hand camera. A competitive trial between the different styles of lanterns was made, showing far greater illumination power for electricity, but also a glare which was painful to the eyes, after a short time. When very large screens are used, it is an admirable substitute for gas.

Exhibitions of lantern slides were held four evenings during each of the three weeks, the prize sets of slides being shown each time. The lecturers were Prof. George R. Cromwell, Mr. J. Wells Champney, Mr. William M. Murray, and Prof. D. L. Umendorf.

The board of judges who worked so faithfully to award medals where they were really deserved, were Mr. Thomas Moran, Mr. Will H. Low, and Mr. Edward Bierstadt. Their report, with the full awards, did not appear until the close of the exhibition. But the awards for artistic and technical excellence in photographs were made on the first day of the exhibition, as follows:

LIST OF AWARDS: H. P. Robinson, J. P. Gibson, F. M. Sutcliffe, Adam Diston, F. P. Cembrano, C. Court Cole, Martin J. Harding, Richard Keene, W. H. Jackson, E. H. Lincoln, George A. Nelson, John H. Tarbell, Robert S. Redfield, Alfred Clements, James L. Breese, Charles I. Berg, Alfred Stieglitz.

Lantern Slides: Catherine W. Barnes, Charles L. Mitchell, George W. Willson.

MR. G. W. WILSON's prize set of slides embraced the following subjects: "Every Cloud has its Silver Lining," "In Largs Bay," "Testing the Breakwater," "Shipwreck at Scarborough, England," "First Lesson on the Pipes," "Windsor Castle from Northwest." The selected prize set of Miss C. W. BARNES were "Seven Times Five," "Seven Times Six," "Dressing the Bride," "Japanese Study," "Look in Mother's Eyes," "The Spanish Lady."

DR. C. L. MITCHELL's selected prize set included "Bronze Doors, Vestibule of the Campanile—Venice (Sansovina)," "Gornier Glacier, Zermatt, Switzerland," "Chamonix and Mt. Blanc," "Maria Theresa Strasse Innsbruck, Tyrol," "Street in Bellagio, Lake Como, Italy," and "Courtyard, Nuremburg Castle, Bavaria."

The only exhibitor of transparencies was Mr. Clarence B. Moore of Philadelphia, who had nine. These were displayed on a special ground-glass box, illuminated from the inside in the evening by the electric light. The successful competitors will receive specially designed silver medals. The attendance was quite satisfactory, and altogether the exhibition was a decided success in awakening among amateurs a taste for better and more artistic work. We shall give a more detailed review in succeeding numbers.

A Good Home-Made Ruby Light.

BY M. Y. BEACH.

WHEN in a strange place amateur photographers frequently want a ruby light by which to develop plates or fill their plate holders. The ready-made lanterns sold by dealers are good enough in their way, with the exception of the candle lantern, which consists of a ruby chimney and a spring candle inside. This candle affair affords insufficient light, although it is convenient to carry. Other manufactured lanterns are costly and cumbersome. The success of the writer in making a ruby lantern leads him to believe that others may desire to make their own lights. This lantern is merely an ordinary starch box. In the groove originally occupied by the cover of this box is inserted a pane of ruby glass. A small hole is cut in one end of the box for ventilation. A candle is placed in the other end. A piece of tin is tacked over the ventilating hole to prevent the escape of white light. Several knife slits are made in the candle end of the box for ventilation, and the lantern is finished. The cost is twenty cents for the ruby glass. The candle costs two cents. Any good-natured house wife will give you a starch box, with her compliments.

A starch-box ruby lantern is a pleasure. It gives a flood of just the kind of a light you want, and enables the operator in plate developing to see what he is doing. This lantern can be made in ten minutes. A jack-knife is the only tool required, and glaziers, even in the smallest country towns, will furnish the glass needed. The candle in this lantern will stand without any socket, but it will not burn unless several knife slits are made through the wood on which it stands to admit air enough for an up draught.

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EDITORIAL COMMENT.

Our Anniversary.—Two years ago this very month we sent the copy for the first number of this magazine to our printers. Our purpose was to publish an independent journal “devoted to amateur photography in all its phases and developments,” artistic, theoretical, and practical. While we have not succeeded in fully realizing all our aims and purposes, we believe that we have given American camerists a magazine which has been helpful to them in many ways. Avoiding as far as possible all embittered controversies we have, month by month, given our readers an amount of information regarding the theory and practice of the art which has made the **AMERICAN AMATEUR PHOTOGRAPHER** a welcome and helpful visitor, and as we celebrate our second birthday we feel that we have the right to congratulate ourselves on the position which our modest venture has taken in the field of photographic journalism.

One result of our two years’ experience has been a better knowledge and appreciation of the needs of our readers, which will enable us in the future

to increase the helpfulness of the magazine and to make it more nearly approach our ideal of what a journal of amateur photography should be, a source of inspiration for more earnest work and a storehouse of technical information.

Believing in photography as a fine art, we hope to manifest our belief by the publication of articles dealing directly with this side of the art, and we extend a cordial invitation to our readers to aid us in our efforts by giving us the benefit of their own personal experience and ideas on the practice of photography, assuring them that the editors desire nothing so much as the furtherance of every good effort for the advancement of photography in its higher branches, and the increased interest and pleasure of their readers.

Brown Tones on Bromide Paper.—Dr. Miethe states that good brown tones may be given to bromide prints by a short treatment of the fixed and well washed prints in

Bichloride of mercury,	10 parts.
Common salt,	10 parts.
Water,	500 parts.

Black Tones on Gelatino-Chloride Paper.—The following bath gives very rich dark tones:

Chloride of gold,	5 grains.
Nitrate of uranium,	5 grains.
Bicarbonate of soda,	75 grains.
Distilled water,	4 ounces.

Black Tones on Mat Surface Prints.—A very good toning bath for prints on mat surface paper is:

Borax,	90 grains.
Nitrate of uranium,	4 grains.
Gold,	3 grains.
Water,	24 ounces.

The above quantity of gold is sufficient to tone at least three dozen whole plate prints. If more are to be toned the proportions of gold and uranium should be increased. The bath remains in good condition for a long time, but fresh gold must be added occasionally to keep the bath up to strength.

Brilliancy in Prints on Mat Surface Paper.—Every worker with mat surface paper must have noticed and deplored the loss of brilliancy which takes place in the prints as they dry. In the washing water they show no lack of brightness, but unfortunately most of this is lost in the dried prints. While it is impossible to restore them to all their original brilliancy, a great improvement in this respect will be obtained by treating the prints, before drying, with either of the two following baths:

1.—Gelatine,	3 ounces.
Water,	34 ounces.
Alum,	3 ounces.

2.—Citric acid,	5 grains.
Sugar,	5 grains.
Water,	1 ounce.

This bath improves with age.

Platinum Toning Bath for Gelatino-Chloride and Mat Surface Prints.—

Distilled water,	1 quart.
Chloro-platinite of potassium,	30 grains.
Biphosphate of sodium,	175 grains.

Dark-Room.—Tourists and cyclists with their cameras will be pleased to know that the proprietor of the Peters House, Bushkill, Pike County, Pa., has recently fitted up a convenient and well-appointed dark-room for the use of amateur photographers, to which all are welcome.

The London Camera Club Conference.—During the fifth annual conference of the Camera Club recently held in London, a number of interesting papers were read. The President, Captain Abney, opened the conference with a well-considered address. The papers read were as follows: "The Use of Uncorrected Lenses in Photography," by Mr. Lyonel Clark; "Photography as a Hindrance and a Help to Art," by Mr. J. Pennell; "Physiological Aspect of Some Problems in Art," by Rev. F. C. Lambert, M.A.; "Photography and Illustrated Journalism," by Major J. Fortune Nott; "Electrophototypy," by Mr. Henry Sutton; "A Brief Review of Photo-Electricity," by Mr. George M. Minchin, M.A.; "An Application of Photography," by Mr. C. V. Boys, F.R.S.; "Allotropic Forms of Silver," by Mr. H. M. Elder, M.A. Of these papers those by Mr. Pennell and Mr. Sutton seem to have excited the most interest, although it seemed to be the general opinion that Mr. Pennell's paper was not intended to be taken seriously. Here is what the latter gentleman had to say regarding the claims of photography to be considered a fine art:

"Photography is not a fine art, and never can be. The photographer is not an artist. He uses an unintelligent machine to obtain results which depend for their artistic value upon the most sensitive human intelligence and the most highly developed technical ability. The photographer, merely by calling himself one, cannot become an artist, when he has not the artistic temperament and lacks the patience to acquire the technical ability. The so-called photographer endeavors to produce by machinery what the true art worker produces by skilled handicraft. The nearer a machine-made photograph seeks to approach artistically produced art, the more glaring are its defects and the more evident its shortcomings. Photography has become the resort of people who imagine that by pointing a machine at nature they can produce a picture. Again, photography never does and never can make selection. All great and good art is nothing more than selection and arrangement, and here, perhaps, more than anywhere else, photography comes to grief. No object other than a perfectly flat one, which can be placed directly

in front of the middle of a lens, can be rendered by the camera with exact truth. Even then the chances are a million to one that some of the important features will be left out. Photography is not accurate; at least, if it is accurate, and I do not assert positively that it is not, no artistically constructed person then could wish for an accurate, that is, a photographic rendering of great facts in nature, since the camera hopelessly destroys their feeling of size and importance."

If Mr. Pennell intended his paper to be taken seriously, he has serious charges against photography as a help in the artistic rendering of nature. One thing militates decidedly against Mr. Pennell's unfavorable estimate, and that is that other portions of his paper show him to be signally ignorant of recent advances in the artistic treatment of nature by means of photography. We hope that some of our readers will undertake to reply to Mr. Pennell's strictures.

Mr. Sutton's paper was interesting because it described a novel method of producing relief blocks direct from the original negative. The process is simply a means of producing a direct electrotpe from a gelatino-bromide negative, which is then passed on to the printer. This method dispenses with the use of collodion, the zinc, or other bichromated surface and with the difficult art of etching. Briefly described the process is as follows: A negative is made of the object to be reproduced, using a positive screen; this negative is then developed with alkaline pyro or hydroquinone, fixed in hypo; when washed, care being taken that the film does not absorb too much water, the plate is placed on a metal support and gradually heated to 212 degrees Fahrenheit. Owing to the interposing screen, certain portions of the image hold no reduced silver and melt under the action of heat, and are drawn by capillary attraction under the unmelted portions which assume a decided relief. This capillary attraction seems to be proportioned to the amount of reduced silver, and therefore to the image. The importance of this consists in the fact that the image becomes the actual regulator of the sizes of the dots, the two operations of relief and graduation proceeding at the same time. When the operation is complete it only remains to make an electro from the negative by the well-known method, in order to have a plate ready for the press.

In the discussion which followed, participated in by such well-known experts as Captain Abney, Mr. Thomas Bolas, Mr. Leon Warneke, and others, the general opinion was that Mr. Sutton's process marked a distinct advance in photo-mechanical printing methods.

Major Nott's paper gave an interesting account of the part which photography plays in modern illustrated journalism and its great value as a disseminator of pictorial information regarding persons and places.

Mr. Clark's paper gave the results of numerous trials with uncorrected lenses, and concluded with the statement, that while the results were much

better than had been expected, they were still far inferior to work done with perfectly corrected and accurate lenses.

Prof. Boys's paper contained an interesting account of a series of experiments at photographing the formation and falling of a drop of water at different stages of the process, the result being to prove that the drop falls in a triangular fashion with the base and apex alternately uppermost.

The meeting of the conference seems to have been a decided success, and if the American Photographic Conference will do as good work at its annual meetings and not allow them to degenerate into a pleasure junket, it will accomplish much for the development of American photography.

Instruction in Photography.—A Suggestion to Camera Clubs.—Mr. H. Chapman Jones is now delivering a course of six lectures at the City and Guilds of London Institute. The subject will be treated from both a practical and a scientific point of view, as will be seen from the following list of subjects: "Methods of Comparing Lenses, and the Determination of their Useful Properties, Including Focal Length, Rapidity, Width of Angle, Covering Power, etc.," "Conveniences in the Construction of Cameras," "The Production of a Truthful Image," "Distortions Due to the Lens and Distortions Independent of the Lens, their Comparative Importance, Elimination before Exposure, and Cure after Development," "The Action of Light, Analytical, Synthetical, and Initiative," "Photographic Sensitive Surfaces," "Emulsions," "The Results of the Compound Nature of Light," "The Absorption of Light," "The Utilization of the Absorbed and the Unabsorbed Light," "Negative Making in General," "Methods of Determining the Exposure Needed," "The Approximation to Orthochromatic Results," "The Action of Developers," "The Control of Density," "Printing Processes Compared," "Desiderata in Prints, Especially Truth and Permanence," "The Principles of Various Printing Methods," "Color in Prints," "The Conditions Necessary for Photographing in Natural Colors." This is a fairly exhaustive syllabus, and suggests the thought that our camera clubs would be doing a service to their members and to the public at large if they were to employ a suitable person to deliver a similar series of lectures which should be open to all on the payment of a small fee. In all our larger towns and cities there are now a sufficient number of persons more or less interested in photography to make such a course helpful and financially successful.

A Photo-Micrographic Laboratory.—Count R. Sernagiotto has established at Rimini a laboratory for the preparation and publication of reproductions of a photo-micrographic nature. Here is a promising field for some enterprising American photo-micrographist, and one that would well repay exploiting.

Conventionalism in Color.—Mr. J. Howson, in a paper on this subject, read before a recent meeting of the Camera Club, suggested that workers in

monochrome should try to reproduce in their prints the prevailing color seen in a given landscape, that is, to plainly indicate by the color of the print the salient tint of any given view, and he pointed out how, by the use of chloride of silver gelatine paper, great variations in color were easily possible. This is a timely suggestion, and a series of prints made on these lines would form an interesting exhibition.

Every one knows that every view has its distinct and prevailing tint, and truthfulness to nature would be greatly promoted if the amateur aimed to reproduce that tint in his print, instead of reproducing every subject in the "dull monotony of funeral black, in cold purple, or in any single shade of red or brown."

A Revolution in Collodion.—The *British Journal of Photography* informs us that Mr. J. B. B. Wellington has succeeded in preparing a collodion emulsion which registers twenty-five on the Warneke sensitometer. This, if true, will be good news to those who know the superior printing qualities of collodion negatives.

Ethics of the Hand Camera.—Mr. Andrew Pringle is contributing a series of papers on the "Hand Camera to Photography." In the initial paper he has this to say about the surreptitious obtaining of negatives of persons who might not wish to be photographed: "Here let us say that we have nothing to do with so-called 'detective' cameras. We do not consider that any one has a right to steal a photograph of another person, except as an adjunct to an ordinary view; and most certainly we have no right to snatch a photograph of a person in any compromising position or circumstances. Persons walking the streets are objects of public view, and conduct themselves with a knowledge that they are so, but to us it appears the height of impertinence to take surreptitious shots at, for instance, ladies bathing, and unaware that they are the victims of such indecent officiousness. A man who steals an exposure on any person, in any position at all compromising, richly deserves a horsewhipping."

"These be bold words, my masters," but they are only too sorely needed to bring to the minds of many a hand camerist a realizing sense of the responsibility given him by his ownership of a camera which makes surreptitious exposures possible. *Noblesse oblige* should be the ruling principle for every owner of a hand camera, and he should hold it as a matter of conscience never to make an exposure on a person in circumstances under which he would not himself wish to be photographed. All of which is respectfully submitted.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Richmond Camera Club.—At the annual meeting, held in April, the following officers were elected for the ensuing year: Mr. E. F. C. Davis, President; Mr. R. A. Lancaster, Jr., Vice-President; C. D. Habliston, Secretary and Treasurer. On April 29th the club had an outing under the guidance of Captain Andrew Pizzini. Their destination was Forest Hill Park, where the members spent a pleasant afternoon making views of the beautiful scenery, which is very wild and picturesque.

The Boston Camera Club.—The regular monthly meeting was held Monday evening, May 4th. Following the usual routine business a lantern exhibition was given, including slides contributed by the Lowell and Lynn Camera Clubs. The slides, mostly dry plate, were of good quality, those of the Lynn club being more generally interesting, owing to the wider field covered. Friday evening, May 8th, a public lantern exhibition was given in Union Hall, the slides shown being the Yosemite set, sent by the California Camera Club. They were made on dry plates, and the universal verdict was that the set, as a whole, was the best that has ever been exhibited by the Boston Club. Monday evening, May 11th, the sale exhibition of prints was opened in the club rooms, the walls of which were well covered with prints, many of them being of especial merit. During the evening Mr. W. H. Burbank gave a demonstration of the kalotype printing process, and exhibited a number of plain silver prints toned in Clark's platinum toning bath. An informal exhibition of miscellaneous slides closed the meeting. The first sale exhibition of prints made by members scored a decided success, quite a goodly sum being netted for the club treasury. Over three hundred prints were hung, many of them having already been exhibited. The success of the exhibition was such as to make it probable that it will be retained as an annual fixture, since, aside from the pecuniary benefit to the club, an opportunity is thus afforded of obtaining copies of important prints without levying a tax upon the good nature of the owners of the negatives.

Yonkers Photographic Club.—The annual meeting of the Yonkers Photographic Club was held at Hawthorne Hall, Tuesday evening, April 23, 1891. The following officers were elected for one year: John W. Alexander, President, re-elected; E. D. Gardner, Secretary; George B. Wray, Treasurer. Directors, F. W. R. Eschmann, E. T. Sherman, George B. Ritter, and George S. Pentz. The third annual print exhibition of the club occurs on the second Monday in June. The exhibition is to be competitive, and two ribbon prizes will be awarded in each class. A special prize in each class will be awarded for pictures that are entirely the work of the competitor. The classes are as follows: A—Landscape. B—Landscape with figures. C—Animals. D—Marines. E—Genre. F—Portraits. G—Interiors. H—Still Life. I—Hand Camera Work. It is the intention of the Exhibition Committee to publish a souvenir catalogue, and to have it illustrated by six photographs, the work of members, to be reproduced by the half-tone process. Monday evening, May 18th, Mr. Edwin W. Newcomb, of New York, delivered an interesting and instructive lecture before the club, illustrated by the aid of the stereopticon, on "Art in Photography," which was highly appreciated by the members. The club is in a prosperous condition. The improvements in the dark-room, and the additional photographic facilities afforded members, make membership in this organization very desirable for lovers of the captivating art of photography.

The Photographic Club of Baltimore City.—A short time ago the Amateur Photographic Club of this city was disbanded, and it was then determined to start a new club, which would be a combine of all the clubs and persons interested in photography. So a call was issued for a mass meeting, to be held on May 5th, at the rooms of the Charcoal Club, which brought together everybody interested in the cause. The meeting was called to order with Mr. Henry Stockbridge, Jr., in the chair, and it was unanimously adopted that Baltimore

should have a photographic club. A committee was duly appointed to organize the new club, and adopt constitution and by-laws, which would be acted upon at a meeting to be held the following week. On May 12th, with Mr. Henry Stockbridge, Jr., in the chair, the meeting was called to order, and the committee, previously appointed, made their report on organization, etc., which was accepted, viz.: That the name of the club be "The Photographic Club of Baltimore City," and be duly so incorporated. That the members consist of active, associate, corresponding, and honorary.

Of course the above are only a part of the constitution and by-laws, and it is hardly necessary to give any more details, except that the club was organized on a sound basis, and ere long the Monumental City will have a club that will be equal to any in this country. The new organization will have a club house, which will be handsomely equipped in every way, as they intend to have social features connected with the club, as well as photographic. Another meeting was called for May 19th, to elect twelve directors, and with Mr. Harry D. Williar in the chair, the following were elected to hold office until October next: Alexander J. Godby, George L. Smith, James S. Cummins, Harry D. Williar, A. S. Murray, John S. Bridges, Frank M. Clotworthy, B. G. Buck, Charles Quartly, F. W. McAllister, William H. Corner, Wm. Charles Farber, with the following officers: Harry D. Williar, President; Frank M. Clotworthy, Vice-President; B. G. Buck, Treasurer; George L. Smith, Recording Secretary; Wm. Charles Farber, Corresponding Secretary. Also a committee was appointed to rent a suitable club house and the club will soon be domiciled in its new quarters. The club starts with a membership roll of seventy-five, which we expect to increase to fully one hundred and fifty in the next three months.

The Hawkeye Club, Gloversville, N. Y.—This new club was organized May 15th, with sixteen members and the following officers elected: President, J. Frank Davis; Vice-President, F. H. Wilmarth; Secretary, J. B. Tuckerman; Treasurer, H. J. Talford; Executive Committee, F. Girard, George Fort, Charles Gardiner; Committee on Rules, F. H. Wilmarth, H. C. Alvord, G. B. Rowland.

Brooklyn Institute, Department of Photography; First Annual Exhibition.—The first annual exhibition of the Department of Photography of the Brooklyn Institute was opened Tuesday evening, May 13th, at the gallery of the Brooklyn Art Association. A large number of prints were entered for competition, and the judges, Mr. Joseph H. Boston and Mr. H. M. Steele, made the following awards: First award, for highest union of technical excellence with artistic purpose and effect, to Mr. Black's "Brother and Sister." Awards for best portraiture and most artistic work, without regard to subject, to same picture. For best landscape, to Mr. Woodcock's picture "A" in group 83. For best scientific work to Mr. Atkinson for exhibit 10. For best technical work to Mr. Dingman's central portrait. For best hand camera work to Mr. Dingman's tennis picture. For best interior to Mr. Black's picture No. 66. For best group and composite to Mr. Black's picture, "The Death of the Tree." For best lantern slide to Mr. Street's "X" in group. For best lantern slide collection to Mr. Butler.

Society of Amateur Photographers of New York, Friday evening, May 8th.—Special Exhibition of Lantern Slides.—The society was entertained by an informal talk on instantaneous photography, illustrating special athletic contests, horse and boat racing, by J. C. Hemment. The subjects were numerous, such as foot-ball playing, base-ball, running the hare, lacrosse, leaping, jumping, running, views of games on ice and of horse races. Mr. Hemment is an athlete himself, and used the camera most advantageously in recording the various phases and features of the different games. He has been employed to photograph the finish of horse races. The plates are immediately developed after a race and the negative shown to the judges, who are thus enabled to accurately decide a close race. He employs a Prosch shutter and a 4 x 5 hand camera.

Mr. Goodyear, of J. B. Colt & Co., operated a new portable dissolving lantern, and showed the views to good advantage. A vote of thanks was accorded to Mr. Hemment at the close of the evening, in recognition of the success of his work and of his interesting remarks. The lecture illustrated a few of the many uses to which photography is being put.

Tuesday, May 12th.—Regular Monthly Meeting.—President James H. Stebbins, Jr., occupied the chair. The item of chief interest on the notice card was the proposed talk on

"Selection and Rejection in Landscape Photography," by Mr. J. Wells Champney. On being introduced he spoke briefly of the tendency of many amateurs to take any and every object that came in their way without waiting to study or notice whether it would make a pleasing picture. It was true that photography was useful in recording, pictorially, incidents of a trip, portraits of friends, and things only interesting to the maker. What should be sought after is the making of a pleasing picture interesting to every one, and this cannot be done in a hurry. His advice was to wait, study, watch the light, the opportunity, and the position of the objects before making the exposure. On the blackboard he graphically illustrated how a scene on the seashore could be made more pictorial and interesting by introducing figures and objects. Also how the lines of mountain scenery should be arranged to obtain the best results. He supplemented his remarks with a few lantern slides intended to show good and bad composition.

Altogether his advice was of a very practical character. Prof. George R. Cromwell then explained his method of making double photographs of the same person, something similar to Mr. A. Peeble Smith's plan, shown before the society last fall, affixing a box to the front of the lens having two doors arranged for dividing the space. First, one is opened and one-half of the plate is exposed, then the other door is opened (the first having been shut) which exposes the second half of the plate for the second picture. He made a flash-light exposure of the President and Corresponding Secretary with the assistance of Mr. A. P. Smith, and put through the lantern several illustrations of various kinds of double pictures.

President James H. Stebbins, Jr., read a paper on "The Action of Sulphuric Acid on Hydroquinone." Among other things he said it was well known that hydroquinone was not freely soluble in water. He thought if it was converted into the form of a mono-sulpho acid a better solubility would result, and possibly a more rapid reducing effect would be obtained on the bromide film. He described several experiments, but was most successful with a compound barium salt and hydrosulphonic acid. This was quite soluble in cold water, especially if the latter contained three volumes of alcohol. When combined with a potassium salt, like carbonate of potassium, and used as a developer on slow positive transparency plates, a rosy brown color was given to the film. If the salt was decomposed with sulphuric acid (a weak solution) the free acid salt is obtained. He hoped, by further experiments, to obtain a more stable salt, and would report at a future meeting. He wrote out the various chemical equations on the blackboard.

Mr. Burton exhibited a model of the Kapoo Magazine Hand Camera, which had a simple arrangement of carriers to hold the plates, as well as devices for focusing, operating a shutter, etc. Mr. H. P. Price explained the workings of a new 5x7 folding camera occupying very little more space than an ordinary 4x5 Kodak camera. He claimed that it possessed all the natural advantages or points of the regular camera without the weight of the carrying-box. It appeared to be very nicely finished. Mr. J. E. Howland showed the new Kameret Camera just gotten out by the Blair Company. It was designed to be less bulky than other hand cameras, the roll of sensitive film being stored near the front of the camera. A double sliding shutter is provided to prevent exposure when the same is set. There are also two large finders and a novel way of telling when sufficient film has been wound off. On the back is a slide moving transversely to the direction of its length, which exposes to view a section of the film, 1-16 inch wide, directly to the light. The operator looks into this slit when the exposed film is reeled off, watching the puncture in its edge, automatically made when the release button is pressed. When the puncture has reached the other end of the slit, the slide is closed over it.

Exposing a section of the sensitive film in this way is said not to damage the rest of the film; it is quite a departure from the customary care required for hand camera work. One edge of the film is thereby blackened and spoiled. The roll-holder device is removable in case it is desired to use plates. The camera is well made and seemed to be constructed to operate inversely to those of other well-known makes. Mr. Howland explained that the Celluloid Company were preparing the film which would be coated by the Allen & Rowell Company.

Mr. R. L. Bracklow exhibited a portable three-cornered dark-room lamp having ruby

fabric sides and a substantial flat candle at the bottom. It was like the well-known English three-sided lantern.

Following the scientific business, Messrs. James H. Stebbins, Jr., T. J. Burton, F. C. Beach, Dexter H. Walker, and H. N. Tieman were elected delegates to represent the society at the conference during the last of May. Mr. Walker expressed his appreciation of the remarks of Mr. Champney and Professor Cromwell. The meeting then adjourned.

St. Louis Camera Club.—The annual Field Day took place on Saturday, May 30, 1891, at Meramec Park, on the Frisco Railroad. Prizes are offered as follows for excellence in work done on the annual Field Day, 1891:

By A. S. Aloe & Co.—1. For the three best pictures taken on the P. D., one each of the following subjects: a. Best instantaneous view of moving objects. b. Best landscape. c. Best group of members of the club. Prize, A. S. Aloe & Co.'s 5 x 8 R. R. Lens, with iris diaphragm. 2. For the second best three pictures of the same objects, a Bausch & Lomb Diaphragm shutter to be fitted to the winner's lens, size not to exceed 6½ x 8½. Model, 1891.

By M. A. Seed Dry Plate Co.—1. For the best single *genre* picture, size not considered, posing and all of the work to be done by the competitor, ten dollars worth of plates. 2. For the best set of three instantaneous pictures, with the negatives, ten dollars worth of plates. 3. For the best positive made on films, ten dollars worth of plates. 4. For the best transparency on any plate, tone and subject to be considered, ten dollars worth of plates.

By G. Cramer Dry Plate Works.—1. For the best six pictures, with negatives, taken on the Field Day, ten dollars worth of plates. 2. For the second best six pictures, as above, five dollars worth of plates. 3. For the best six prints on albumenized paper, using any negatives, three dollars worth of sensitized paper. 4. For the best three lantern slides, from Field Day negatives, two dollars worth of sensitized paper.

By Mr. J. C. Somerville.—1. For the best six bromide prints of F. D. negatives, twenty dollars worth of bromide paper. 2. For the second best six, as above, ten dollars worth of bromide paper. All competing prints go to Mr. Somerville as his property.

By Mr. H. A. Hyatt.—For the best single *genre* picture, made on the F. D., a Mound City 6½ x 8½ Landscape Lens. Mr. Hyatt is to receive a copy of each competing picture.

By A. P. Erker & Brother.—For the three best lantern slides from F. D. negatives, a fine focusing glass.

All work, unless otherwise mentioned, must be entirely done by the competitor himself, from his Field-Day negatives. W. M. BUTLER, Esq.

The Boston Camera Club.—*The Interchange of Illustrated Subjects:* William Garrison Reed, Manager; W. C. Brown, Assistant Manager.—*Pacific Itinerary of an Illustrated Description of Boston, May 9, 1891*, shipped to the California Camera Club, T. P. Andrews, Esq., Secretary, 333 Kearney Street, San Francisco, Cal. While in California the set will be in the charge of that society, and may be loaned to any amateur photographic club on the Pacific Slope desiring its use. When all applications from responsible organizations have been filled, the California Camera Club will ship to Clarence W. Ashford, Secretary Hawaiian Camera Club, Honolulu, H. I. After exhibition there, that society will ship to the Auckland Camera Club, A. G. Tibbutt, Esq., Secretary, Pratt Street, Auckland, N. Z. After exhibition there, that society will ship to Mr. E. C. Bell, of Edgar Bell & Co., Customs Agents, Market Street, Melbourne, Victoria. While in Australia the set will be in the charge of the Melbourne Society, J. H. Harvey, Esq., Secretary, 59 Hotham Street, East Melbourne. Any other society in that part of the world desiring its use will make application to him. After the set has been exhibited by whatever clubs in Australia that want it, it will be shipped to the Photographic Society of India, T. A. Pope, Esq., Honorable Secretary, Asiatic Society's Building, Park Street, Calcutta, India. While in India the set will be in the charge of that society, and will loan it to any other desiring its use. When all who wish it have been gratified, the set will be shipped to the China Camera Club, W. G. Gibson, Esq., Honorable Secretary, Care of the Agra Bank, Ltd., Shanghai, China. While in China the set will be in the charge of that club. If there are others in that

country that desire its use, they may be gratified by applying to Mr. Gibson. At the close of its circulation in China, the set will be shipped to W. V. Burton, Esq., 9 Kaga Yashiki, Hongo, Tokio, Japan, Care of J. W. Hall, Yokohama. When through with it, Mr. Burton will ship by freight to the California Camera Club, T. P. Andrews, Esq., Secretary, 333 Kearney Street, San Francisco, Cal. The California Camera Club will report its arrival to the manager and hold for instructions.

Rochester Camera Club.—The regular monthly meeting of the club was held on May 1st, President Croughton in the chair. An outing for Decoration Day was decided upon to Scottsville, N. Y. The club has a skylight which is to be equipped. The organization is in a prosperous condition.

Photographic Section of the American Institute, Tuesday, May 5th.—*Regular Meeting.*—President Henry J. Newton in the chair. Mr. A. D. Fisk showed a peculiar level for swing-back cameras, also an English magazine hand camera. A dinner committee was appointed to provide for the annual summer dinner, constituted as follows: Dr. A. H. Elliott, Mr. O. S. Mason, Mr. C. Van Brunt, and Mr. Lincoln Adams. Mr. A. D. Fisk exhibited a number of lantern slides, in the lantern, then the meeting adjourned.

Photographic Department of Brooklyn Institute.—*Exhibition of Photographs.*—The first exhibition of this association was held in Brooklyn, at the gallery of the Brooklyn Art Association on May 12th, and was largely attended by amateurs and their friends. Very nearly five hundred photographs were displayed, a few series being framed, representing the work of twenty exhibitors. The judges, Joseph H. Boston, H. M. Steele, and Frank Pearsall, awarded "honorable mentions" in eleven of the twelve classes, Mr. Alexander Black securing the largest number, and Mr. L. P. Atkinson next. The work displayed was of good quality. The committee in charge of the exhibition was Professor W. C. Peckham, Chairman; Mrs. Geo. W. Bowker, A. S. Bedell, Mrs. Benjamin Estes, J. F. Flagg, H. J. Newton, A. S. Bedell, J. C. F. Priest, Mrs. V. C. Titcomb, and W. H. Woodcock.

California Camera Club.—We regret that distance prevented us from accepting the kind invitation of this enterprising club, on the successful marine excursion undertaken during the time President Harrison was in San Francisco to witness the launching of the "Monterey." The steam tug "Active" was engaged and carried a crowd of amateurs. Many views were made, and altogether the excursion was most enjoyable.

Yonkers Photographic Club.—The annual meeting was held April 28th last, resulting in the election of John W. Alexander, as President; E. D. Gardner, Secretary; George B. Wray, Treasurer.

Monday evening, May 18th, Mr. Edwin W. Newcomb of New York, lectured on "Art in Photography," which was illustrated with lantern slides. His remarks were right to the point and quite instructive. There have been improvements made in the dark-room and other facilities added. The club has the promise of a large membership. It is fortunate in securing for a secretary such an efficient art student and worker as Mr. Gardner has proved to be.

The Columbia College Amateur Photographer's Society's Exhibition.—The exhibition took place in the Chemical Museum of the School of Mines, on the afternoons and evenings of May 7th and 8th. In addition to the specimens of the different photo-mechanical processes on permanent exhibition at the museum, there were exhibits from seven or eight members of the society, Messrs. C. Barton, C. H. Young, H. R. Taylor, Dwight W. Taylor, O. Jackson, Jr., E. G. Brown, and H. M. Brookfield. The views by the two Mr. Taylor's were regarded as showing the best work, particularly their surf and colored pictures.

The Pacific Coast Amateur Photographic Association, of San Francisco, has just concluded its annual exhibition of lantern slides and prints, and is congratulating itself upon one of the most successful displays it has ever made. This association, which is the oldest on the Pacific Coast, and one of the oldest in the United States, has just moved into commodious quarters in the Flood Building and was thus enabled for the first time in its history to hold its annual exhibition in its own rooms, which are now most admirably adapted for the purpose. While the number of prints shown was smaller than in former years, the improved quality of the work more than compensated for the decrease in number, and the crowds who

visited the rooms seemed to appreciate all they saw. The most noticeable features of the exhibition were the scarcity of albumen prints and enlargements, and the prominent part taken by the lady members, who showed that they could produce work of a quality equal in every respect to the best on the walls.

Among the different exhibits, the President, Major W. H. Heuer, showed some extraordinary results which he called "Freaks," and which certainly were, as they were intended to be, a puzzle to most people as to their method of production. Besides these and some humorous studies, which were much noticed, he also showed an exquisite portrait of a child that was universally admired.

Miss C. A. Burke had the largest exhibit of any member. Her prints were mostly genre studies of children, and deserved great credit for the enormous amount of patience and ingenuity which she must have displayed to have obtained such results. Her "Rivals," "School," "Beginning Early," and a "Brown Study," may be particularly mentioned. Another more ambitious attempt, by the same lady, was "A Last Look," which represented two figures standing on the sea-shore, straining their eyes to obtain a last look at a ship rapidly fading into the distant mist.

Miss I. W. Palache showed a large number of studies, mostly landscapes, which all showed the result of true artistic feeling combined with a perfect technical knowledge of photography. Her "After the Storm," and "Angora Creek," were the most complete as pictures, but an artist lingered long over "Approaching Storm at Tahoe," and "Early Morning at Tahoe," which fascinated by their true rendering of nature as it really is.

Mr. P. S. Carlton showed a large number of landscapes and marines, mostly printed in platinum, a few in bromide. The most pleasing, perhaps, was "San Lorenzo Creek," a bromide enlargement of very fine quality, but all were good and the number was too large to admit of detailed mention.

Mrs. J. P. LeCount had several genre pictures which showed great feeling and artistic touch in their arrangement. While "Songs Without Words," and "Seaweeds," were both great favorites, her most popular picture was "Anxious Hearts," which attracted much attention and was universally admired. It represented a mother and her child looking anxiously from beneath the stone arches of a castle on to the lengthening shadows for some hoped-for figure which is long delayed.

Mr. E. L. Woods was, as usual, represented by a choice collection of landscapes which showed great taste and skill in their selection and production. One of the oldest and one of the best workers in the association, he, this year was stronger than ever, and his exhibit was universally admired. While there was not one study in his whole collection which was inferior, the most attractive were "After the Rain," "Evening Near Blythedale," and "Worn Out."

Mr. Palache showed some excellent work, mostly landscapes from the mountain region of California, of which "Mount Tellac," and "The Lonely Lane," deserve especial mention.

Mr. C. F. Cormack had some exquisite studies, printed on bristol card-board, of which "A Dark-Room Assistant," and "Portrait of a Child," were the most noticed.

Mr. G. Knight White, the Secretary, exhibited several specimens of carbon printing, of which "Tired" was the most attractive. It represented a young girl, worn out with her labor, leaning over her spinning wheel and dreaming of other days. This print was awarded the prize given to the most popular picture in the exhibition, as decided by a ballot of the visitors and members.

Dr. H. P. Carlton had a fine collection of landscapes and marines, mostly printed in platinum, of which, "In Winter Quarters," "Through the Pines," and "On San Lorenzo Creek," were especially good.

Mr. G. W. Dornin's "Blue Monday," "Winter Foliage," and other studies, attracted much attention, but his "Early Morning in Sonoma Valley" was probably the most perfect landscape in the exhibition. The fog banks lying in the valleys while the rising sun lit up the hill-tops was perfectly rendered.

Miss Hitchcock had several well-executed bromides, of which her "Study of a Cat" attracted most attention. Her "Curiosity" was also particularly good.

Dr. Goddard's "Sambo" and "Critics from the South" were both good, although the

latter strongly resembled Mr. Lowden's "Critics," exhibited in 1888. His "Gathering Daisies" was also very popular.

Mr. Herrick had several landscapes which showed good selection, particularly his "South Dome of the Yosemite."

Mrs. January exhibited a portrait of a child which showed great taste and feeling. Mrs. Burt had a study of an old oak tree, which was very picturesque and attractive, and Miss E. W. Ward had a series of views of "Malabar Glen," which was very creditable. These ladies have very recently joined the association, but are evidently capable of taking their place with any of the older members. It is to be hoped that more of their work will be shown another time.

Mr. I. E. Thayer showed a number of prints from good negatives, but many of them were spoiled by being produced in a process which gave them the appearance of inferior pink tintypes. Those which were printed in bromide or silver were highly creditable.

International Photographic Exhibition.

An international photographic exhibition will be held under the auspices of the Glasgow and West of Scotland Amateur Photographic Association in the Institute of Fine Arts, Glasgow, during next September. We take pleasure in calling the attention of American amateurs to this important exhibition, and append the official statement of the conditions and schedule of classes. All communications should be addressed to Mr. Wm. Goodwin, honorable Secretary, 3 Lyngedoch Street, Glasgow, Scotland.

CONDITIONS.

FRAMING.

1. All pictures must be mounted and framed. All frames must be rectangular. Pictures over whole-plate must be framed separately; half-plate and under must be framed in sets, but whole-plate pictures may be framed either way. Stereoscopic and Lantern Slides to be sent unframed; suitable arrangements will be made for displaying them.

FOREIGN PICTURES.

2. Pictures from foreign countries may be sent unframed, but must be mounted; they will be framed temporarily, free of cost.

LABELS ON FRAMES.

3. Each frame may bear, on the front, titles of pictures and name of exhibitor. Full particulars for catalogue must be given on a label so attached to the frame that it may hang over the front while the catalogue is being compiled. When pictures are for sale, the price, with or without frame, must be stated on the label, also on Form B. A charge of ten per cent. will be deducted from the price of pictures sold.

ENTRANCE FEES.

4. The annexed Entry-Form (A) must be sent to the secretary, on or before 10th August, 1891, accompanied by an entrance fee of 2/6 for the first frame, and 1/— for each frame thereafter. Entrance fee for stereoscopic and lantern slides, 2/6 for the first set; 1/— for the second, if two-sets are sent. No charge for wall space except for trade exhibits. (Rule 19.)

DATE OF DELIVERY.

5. All exhibits must be delivered, free of charge, at the Fine-Art Institute, 157 Sauchiehall Street, Glasgow, between the 17th and 22d August, 1891; and Form B must be sent to the secretary, as a letter of advice, when the cases are despatched.

NON-RESPONSIBILITY.

6. The committee will unpack, repack, and deliver to carriers, all exhibits, free of charge, but will not be responsible for damage. Experienced men will be engaged to do the work, and every care will be taken of exhibits.

7. An exhibitor may send two sets of pictures for competition in any class, but only one of these sets can gain an award. The class for which any exhibit is entered must be stated on Form B.

8. No picture can compete in more than one class, except in the case of lantern slides and enlargements, which may be from pictures otherwise exhibited.

PRODUCTION OF PICTURE.

9. Except in Classes 1, 2, 3, 4, and 5, which are open to professionals only, the whole production of the picture—including exposure, development, retouching, printing, and toning—must be solely the work of the exhibitor. In Classes 1, 2, 3, 4, and 5, these operations may be the work of employees, but must be done on the exhibitor's own premises.

CHAMPION CLASS.

10. No restrictions will be imposed as to the date of production, or as to previous exhibition of any picture; but pictures which have gained first award in any class, at any open exhibition, can compete only in the Champion Class. A declaration must be made on Form B that pictures have or have not gained such award. This condition does not apply to awards gained at exhibitions of photographic societies confined to members.

11. Colored pictures cannot be entered for competition, but enlargements may be finished in monochrome.

12. A print from the original negative, for the use of the judges, must be sent with each enlargement, *but preferably not framed with the enlargement.*

POWERS OF COMMITTEE.

13. All exhibits are subject to the approval or rejection of the committee. The negative from which any picture has been produced must be submitted for inspection of the committee, if required.

14. No exhibit to be removed before the close of the exhibition.

JUDGES.

15. The names of the judges will be announced in the *Photographic Press* previous to the date of entry; and every endeavor will be made to secure the services of well-known men of recognized ability.

POWERS OF JUDGES.

16. The award of the judges shall be final. They shall have power to withhold awards in any class, also to make extra awards in any class.

MEDALS.

17. Only medals from the die of the association will be awarded, and no medals for advertising purposes will be accepted.

NON-COMPETITIVE CLASS.

18. Pictures may be sent for exhibition in a Non-Competitive Class. Entrance fee as per Rule 4. The committee reserve the right to invite the exhibition of pictures of special interest, and to hang them free of charge.

TRADE EXHIBITS.

19. A limited number of panels, 12 feet long by 8½ feet high, will be reserved for trade exhibits, for which there will be no awards, and which are free from the restrictions imposed on competitive exhibits. Entrance fee, £3:3s. Should space permit, these panels may be extended at a charge of 10s. for each additional 25 square feet. Exhibitors may arrange their own frames, subject to the approval of the hanging committee. The name and address of the exhibitor will be suitably displayed in a uniform manner, free of charge. Lantern slides, as trade exhibits, must be sent framed. Entrance fee, £1:1s. per 100 slides, or part of 100.

SCHEDULE OF CLASSES.

In the whole of these classes any printing process may be employed. Not more than two sets of pictures may be entered in any class. Each set must contain the number of pictures named, neither more nor less; infringement of this rule will entail rejection. In Class 24 (Scientific) the number named may be exceeded if desired.

OPEN TO PROFESSIONALS ONLY.

CLASS.

1. Portraits, Whole-plate and over, Set of four.
2. Portraits, Under whole-plate, Set of six.
3. Enlargement, Any size; portrait only, One only.
(In the above classes the picture may contain one or more figures).
4. Enlargement, Any size; other than portrait. One only.
5. Lantern Slides, Any subject, Set of twelve.

OPEN TO AMATEURS ONLY.

6. Portraits, Whole-plate and over, Set of four.
7. Portraits, Under whole-plate, Set of four.
8. Enlargement, Any size; portrait only, One only.
(In the above classes the picture may contain one or more figures).
9. Enlargement, Any size; other than portrait, One only.
10. Lantern Slides, Any subject, Set of six.

OPEN TO PROFESSIONALS AND AMATEURS.

11. Landscape, Whole-plate and over, Set of four.
12. Landscape, Under whole-plate, Set of four.
13. Marine and clouds, Any size, Set of four.
14. Animals, Any size, Set of four.
15. Outdoor groups, Any size, Set of four.
16. Architecture, Any size, Set of four.
17. Interiors, Any size, Set of four.
18. Still life (flower studies, etc), Any size, Set of four.
19. Flash-light, Any size; any subject, Set of four.
20. Instantaneous, Half-plate and over, Set of four.
21. Hand camera, 5 x 4 and under; seaside and marine, Set of twelve.
22. Hand camera, 5 x 4 and under; other than seaside and
marine, Set of twelve.
23. Stereoscopic transparencies, Any size, Set of six.
24. Genre (Groups or figure studies to form principal part of the picture), One only.
25. Scientific (Microscopic, astronomical, geological, botanical, zoolog-
ical, etc.), Not less than four.

In the above twenty-five classes one silver and one bronze medal for each class will be placed at the disposal of the judges; also two gold medals to be awarded in classes of special merit.

CHAMPION CLASS.

For pictures which have gained first award at any open exhibition (See Rule 9). Open to amateurs and professionals. Two gold medals—one for portraits, groups, and figure studies; one for any other subject.

LADIES' COMPETITION.

Open to lady amateurs only. Set of four pictures, any size or subject. Silver and bronze medals.

PHOTO-MECHANICAL SECTION.

The restrictions imposed on the previous classes do not apply to this section, the only stipulations being, that pictures must be entered in sets of six, and that the name of the process must be distinctly stated.

Entrance fee, 10/ per set of six pictures.

Class 1, photogravure; 2, phototype, including zincotype; 3, collotype; 4, woodburytype; 5, photo-lithography.

A silver and a bronze medal will be awarded in each class.

APPARATUS.

Tables will be provided for exhibits of photographic apparatus and material. Fee, £2 2/ per 12 square feet; further space, if available, at a proportionate rate. Medals will be awarded for general excellence of exhibit.

"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 201.

CLOUDS, PHOTOGRAPHING OF—Always endeavor to have the sky in harmony with the landscape. There may be many reasons why it is not. The clouds may not be handsome; they may be good, but unevenly distributed, or good but yet not suited for the landscape, as for instance: It is known how handsome an effect heavy clouds in manifold groupings will have in a marine view, particularly if the sun is behind such clouds, lighting up their edges, while each wave reflects the light of the sky. But place these clouds, with the same light effect, in a narrow upland picture, with mountains, and the clouds in front of the sun will envelop the foreground in shadows. The mountain sides are hardly lit up, even with a cloudless sky, but in the marine view we have nothing but light and illumination. Consequently, the effect here is an opposite one, and sky and landscape are in strong contrast, while rich cloud formations are the most attractive part of the picture above the smooth surface of the sea. They are almost valueless in an upland picture with large mountains, although they may appear as a principal part of the picture, on account of their illumination. Thus we see, as a general rule, that a richly clouded sky, with high effects, is most attractive in an open landscape, and that it will probably be detrimental in a narrow landscape (with mountains). Thus it will be seen that landscapes without much elevation, or sea views, should only be taken with suitable clouds. On the contrary, in mountain scenery it is best to avoid too much cloud contrasts, and to make use only of such clouds as may harmonize with the scenery. There is also an inharmonious distribution of cloud formations which, separately, might each be called handsome. The prettiest cloud masses, if only partially grouped, may rob a landscape completely of its uniformity, and, under such circumstances, it would be a mistake to expose a plate on them. Light, feathery clouds are pretty, but possess so little power of illumination, compared with the sky, that they can hardly be taken with an ordinary plate. In such cases, the idea of any reproduction had better be renounced. If we consider the number of cases in which it would be an advantage to print the natural sky with the landscape, it will be found that it is only very exceptionally the case that such should be done, and as a rule we must be prepared to renounce all natural sky effects.

CLOUDS, PAINTING IN—The negatives for this purpose should be thin and faint, unlike the fine cloud pictures intended as studies for artists, showing all changes, from the deepest shadows to the brightest white. Not independent objects, but in harmony to the conditions of the light of the landscape in light and shadow—their darkest

parts still being of efficient light action. Too strong clouds produce landscapes of a heavy and gloomy character, and without any uniform effect. These thin cloud negatives, with an almost white sky, can be printed in if the light is subdued by a paper roll laid parallel with the frame. Too often photographers reproduce the same cloud negative upon different pictures, and oftentimes upon such as have been taken under entirely different circumstances and conditions. To produce a harmonious impression, it is necessary that the cloud negative used in a landscape be placed in the same form and illuminated with equal elevation of the clouds above the horizon as in the picture. A different illumination gives the landscape a peculiar impression, and destroys all uniformity. Care should also be observed that the cloud negative should be in the same focus as the lens (*i. e.* same lens), for if of a large one they will appear gigantic, and rest heavily upon the picture. It will thus be seen that even with a large stock of cloud negatives on hand, it is difficult to find one adapted to every subject, and there is often a strong temptation to introduce striking cloud effects where they are entirely out of place, and not in keeping with the appearance and lighting of the landscape. The only way of obviating this fault, that I can see, without renouncing combination printing altogether, would be to take a cloud negative with every landscape, care being afterward taken to avoid the temptation to print the skies deeper than they appear in nature, and thus again produce, perhaps, striking effects, but certainly not a true representation of nature. It may be said that a good sky is not always to be had when the view is taken. If possible, wait till one can be had at the same time as the view. For in some cases even a blank sky is less objectionable than unnatural clouds, and a plain gray sky may suit some pictures. But the introduction of the orthochromatic plates, and especially the iodide of silver plates, will enable many skies to be taken at the same time as the view, and thus simplify matters. To obviate many of the perplexities and difficulties in printing in, the following has been proposed, with every prospect of success, as it can be done after the print is toned and finished, and no masks are required. The idea is simply to resensitize those portions only of the print which are left blank for the sky. Take a finished print, damp it and hang it upside down on a drawing board or sheet of glass. With a camel's hair brush and a weak solution of nitrate of silver, paint over the white portion intended to receive the sky. The object of working upside down is that the sensitizing solution may drain away and not into the landscape. The paper is dried in the usual way, exposed beneath a cloud negative, toned and cleared (fixed).

COATING PLATES—The requisites for this operation are absolutely clean glass, a perfectly level surface, on which you are to place the coated plates to "set," either a large glass plate, which, by the means of wedges and a spirit level, is accurately made level, or by taking a large board (placed on a flat table) and screwing into its upper face three screw eyes, arranged to form a triangle, large enough to support another thin board slightly larger than the plate; the latter may be accurately leveled by simply turning the screw eyes to the right or left; a small vessel to pour your emulsion from, a small china teapot or a feeding cup, a glass rod for spreading the emulsion, and a place to dry the plates; a light-tight box, or cupboard, so arranged to let a current of air pass through is also needed. It is well to coat one plate at a time after it is leveled with the faintest ruby light, or ruby covered with yellow. The emulsion being melted by placing the bottle in water at 120° F., a sufficient quantity, say two ounces, is poured into the teapot or feeding cup. This amount will cover twelve quarter plates. About a teaspoonful of the emulsion is poured on the center of the plate, the glass rod is taken between the thumb and forefinger and brought down in contact with the pool of emulsion (but not so as to touch the glass), which immediately runs to the side of the plate, and rapidly moved, first forward and then backward, to the edge of the plate, and at each end removed by simply twirling the rod a little. In a short time the film will "set," then it can be removed to the drying box and placed in an upright position if desired, and so on until your cup of emulsion is exhausted. It is desirable that the temperature of the room should not be higher than 60° F., though it is an advantage to have your plate warmer than that, in order to let the emulsion flow more rapidly, and it is also well to have at hand a vessel of hot water in which to place the coating pot to keep its contents warm. For larger plates a coating box is to be preferred. Some amateurs coat their plates by "flowing" the emulsion as you would varnish. In large establishments the plates are coated by machinery, of course.

COATING PAPER—As in plates, the paper must be on a perfectly level surface; if small quantities only are to be coated at a time, a glass slab is desirable. Moisten the paper to be coated and lay it on the slab of plate glass, and then establish contact with the glass by smoothing the paper down by means of a squeegee. Any one can make this by taking a strip of soft India rubber and fastening it between two smooth wooden laths, so that about one-half of an inch of the rubber projects below the laths. The slab of glass having the moistened paper is examined, and, if not, is placed on a true

level. A convenient quantity of the emulsion is poured upon the paper and distributed by means of a glass rod, as in coating plates, or a roller can be made by taking a glass tube, one inch in diameter, a little longer than the width of the paper. In each end plunge a cork which has previously been bored true, through which pass a stout wire. To prevent this roller coming into actual contact with the paper, a rubber ring is placed on each end of the glass tube. The exact position of these rings will be determined by the width of the paper. They should be about $\frac{1}{4}$ inch from the edges of the sheet on either side. All surplus emulsion driven off by the roller should of course be caught in a dish placed to catch the overflow. When the emulsion has "set," hang it up to dry in a drying box, through which a current of air is passed. Other ways to coat paper by trays, boxes, etc., have been recommended, but the above is simple and has always given me satisfaction.

COATING WOODEN TRAYS, ETC.—Asphaltum varnish has been recommended frequently for this purpose, but it should never be used when hypo, in its solid or liquid form, is used. The hypo quickly attacks and dissolves the asphaltum, and if it does not cause the tray to leak, it causes a very dirty semi-liquid precipitate to form, injurious alike to plates and prints. A strong solution of hypo will remove the stains of asphalt varnish from the hands. Melted wax is also used, but after a time it becomes useless and requires frequent renewal. The best coating that I know of for trays is a mixture of Canada pitch and vulcanized rubber, equal parts, and $\frac{1}{4}$ part of resin, boiled up together in an old saucepan. If not liquid enough, add more pitch. When melted, stir and apply with a paint brush quickly, and work well into the joints. Of course the tray must be well dried previously. As this mixture is very inflammable, it is well to prepare it out of doors, having the cover of the saucepan handy, should it catch fire, to extinguish it.

COCKLING—Is one of the many perplexities that meet the amateur, both with his silver prints and his cardboard mounts. Several remedies have been recommended. For the prints, before they are dry, to roll them on a round stick, face outward; treat another in the same way, and so on until the whole batch are rolled on the same stick, and then place them in a hollow cylinder until fully dried, when they will almost always lie flat. But I prefer to remove them from their final wash and draw them through the following mixture, face downward, and draining them by drawing them over the side of the tray: Water, 1 part; alcohol, 4 parts; glycerine, 3 parts; then place them between sheets of blotting paper for several hours.

When nearly dry remove and place them in a blank book, where they can remain until mounted, when they will be found to be perfectly flat. In mounting, all that is required is to quickly coat them with fresh starch paste and rapidly apply them to the board; rub them well into contact under a sheet of thick paper (letter) with the hand, after which take hold of the two ends with both hands, the thumbs on the print, and gently bend the board into a half circle, the print uppermost (convex), then lay the cards aside to dry, resting on their ends; when dry they will be flat, or nearly so. Or the following can be used, which is admirable: Good bleached shellac is broken up into pieces the size of small peas, placed in a wide-mouthed bottle, and enough strong alcohol to cover it is poured on. The bottle is then placed in water, which is slowly heated to boiling. A solution is thus obtained which becomes gelatinous when cool. It should be of the consistency of vaseline at ordinary temperature. As thus prepared the shellac, thinned with a little alcohol, can be used for mounting, but it is very much improved by the addition of a very little dissolved in chloroform mastic, 1 oz., chloroform, 2 oz., and the solution filtered through a sponge stuffed into the lower part of a large glass tube, the end drawn out. The proportion of the mastic solution depends upon the strength of the shellac solution. About $\frac{1}{4}$ of the volume of the latter solution is about correct. If the shellac is quite thick, a small proportion of alcohol may be required, but it is important that the proportion of the latter should not be sufficient to thin the mixture too much, for a thin solution is apt to penetrate quite through the print and to show on the face. The mastic makes the mountant work smoothly under the brush. The print being dry, place it face downward on a sheet of paper or plate of glass, and apply the solution evenly with a brush. Pick up the print with the two hands and lower it upon the card or paper, only allowing one end of the print to touch. The position of this end should be previously marked with a pencil. Place the edge of a heavy paper weight on the end of the print, then lower the other end slowly, running a straight bone paper knife over the face, from left to right, to keep the print smooth and to drive out air bubbles. The print should lie flat, and when the edges are pressed down all around, it may be vigorously rubbed with a dry cotton cloth. Any surplus of the solution may be removed with alcohol. The solution does not dry rapidly, but when dry is very adherent.

COLLODION—Maynard, of America, in 1847, discovered that a certain kind of pyroxyline (gun cotton) was soluble in a mixture of alco-

hol and ether, and that as these solvents evaporated, the pyroxyline was left behind as a delicate transparent skin or film. To this substance, so obtained, the name of collodion was given, and it was found to be of great service in surgery, to produce a false skin or covering to raw places to keep away the irritating action of the air. Scot Archer, in 1850, applied this new material to photographic purposes, using it to coat glass plates and to receive and hold the sensitive salts which were to be affected by light. From that time till 1878 the collodion, or wet process, was almost universally employed in photography. The advent of the dry plate in the latter year has gradually caused collodion to hold a secondary position. Good collodion, for general work, can be made by taking a half pint of alcohol (sp. g. 820) and the same quantity of ether (sp. g. 725), and dissolve in this mixture 115 grains of pyroxyline. In cold weather it is well to reduce the quantity of alcohol by one half ounce, and increase the ether by the same amount. As the great manufacturing firms have made the preparation of it a specialty, it is better to procure it from one of them than to attempt to make it, as you can procure a better article at a less cost than when attempted by yourself.

COLLODIO-CHLORIDE PRINTS—Paper coated by a collodion emulsion sensitized with chloride of silver. To tone these prints the following bath will be found to give all shades, from sepia to purple, and will keep well: No. 1: Hyposulphite of soda, 5 grammes (77 160 grains); acetate of soda, 30 grammes (463 grains); water, $\frac{1}{2}$ liter (17 $\frac{3}{4}$ oz.) No. 2: Chloride of gold, 1 gramme (15 $\frac{1}{2}$ grains); water, $\frac{1}{2}$ liter (17 $\frac{3}{4}$ oz.) Pour No. 2 gradually, and with frequent shaking, into No. 1. Reversing this would decompose the bath. The mixture is of a reddish color at first, but becomes colorless in a short time, when it is ready for use. This bath tones regularly in from three to five minutes. Wash the prints several times before toning. If the bath acts too quickly, add more water. Clear in a 5 p. c. solution of hypo, and wash in the usual way.

COLLODION TRANSFERS—A picture made on a collodion film, which is transferred to paper or other material, such as parchment, canvas, or textile material of light make. One great advantage in the employment of the collodion transfer process lies in the great rapidity with which prints can be made and finished. When the plate is finished, cleared and washed, a sheet of transfer paper, previously steeped in water, is laid down upon it and rubbed in contact with the image on the glass. If it is desirable that the surface of the transfer possess a high and smooth gloss, the transfer paper must

(To be continued.)

BOOKS AND EXCHANGES.

From the Souvenir Publishing Company we have received a copy of "An Illustrated Souvenir of Lynn, Swampscott, Marblehead, and Nahant," containing twenty-four half-tone cuts of the leading objects of interest in the four places named. Some of the illustrations were given in our March issue, and an interesting fact connected with the reproductions is that the original negatives were made by amateurs, Messrs. W. A. Pavear, E. F. Bacheller, J. W. Darcy, W. H. Drew, J. W. Coates, J. W. Bowley, W. C. Wheeler, C. P. Jeffers, G. C. Hovey, and J. W. Gibboney, all members of the Lynn Camera Club, being represented in the collection which is a remarkably good specimen of amateur work.

THE PHOTO AMERICAN REVIEW. It is somewhat unusual, with the already well stocked field of American photographic literature, that a new and more pretentious candidate should be put forward for patronage. The May number, being the first, is composed of a large number of half-tone process cuts from different negatives, a few being meritorious and several positively bad. The reading matter and pictures are separated. There are a few good papers on photo-subjects, but a large majority of the pages are devoted to the names and description of new books. It appears, on examination, to be an advertising book catalogue, with a few pages of photographic matter added. No public statement is made as to who the editor is. In the back are condensed notes of meetings of the New York Society of Amateur Photographers, and the statement made that the *Review* is to be their official organ, as well as of the Conference. Harry C. Jones & Co., New York, are the publishers.

ELEGANT PRIZES FOR THE LADIES. The Publishers of *The Canadian Queen*, Toronto, Canada, are offering two new prize competitions, with leading prizes consisting of a pair of Shetland Ponies, carriage, and harness, a Free Trip to Europe, first-class upright piano, two weeks' vacation to any summer resort in Canada or the United States, all expenses paid; safety bicycle or tricycle, one hundred dollars in cash, suite of parlor furniture, ladies' gold watches, etc., etc. This magazine has become famous on account of its prize competitions. Hundreds of Americans have won valuable prizes in previous contests. Sample number of *The Queen* with full particulars, will be sent by the publishers upon receipt of the address of any lady and six U. S. 2 cent stamps. Address, *The Queen*, Toronto, Canada.

AUSFÜHRLICHES HANDBUCH DER PHOTOGRAPHIE, by Dr. Josef Maria Eder. Wilhelm Knapp, Halle, 1891. Vol. I., Parts I. and II.

The thoroughness of the German investigator and book maker has never been more signally displayed than in the second edition of Dr. Eder's Handbook of Photography, now in preparation. The prospectus shows that the entire field of theoretical and practical photography will be covered with a thoroughness and completeness which will make the work indispensable alike to the practical photographer, the photo-chemist, the maker of apparatus, and the experimenter. The present edition is thoroughly revised and greatly enlarged, and in the parts now before us, the author gives an entirely new history of photography, based on the careful study of original sources, in which the researches in the chemical action of light and the beginnings of photography previous to Daguerre's discovery are described for the first time. Other subjects treated in the volume are Photo-Chemistry, Spectrum Photography, Photography with Artificial light, Photographic Optics, Apparatus, the Studio, and the Laboratory. There is a thoroughness and completeness about the treatment of these important matters which prompts the wish that some of our enterprising publishers of photographic literature would give us an American edition of a work which bears about the same relation to photography that the Encyclopedia Britannica does to arts and letters.

THE PHOTOGRAPHIC INSTRUCTOR. Scovill & Adams Co., New York, 1891.

The popularity of this book is shown by the fact that the publishers have found it necessary to issue a third edition within a short time from the issuing of the second edition. The present edition retains all the important matter of previous issues and makes some additions which brings the book well abreast of recent advances in photography. It is one of the best elementary photographic text-books we know of.

THE AMATEUR PHOTOGRAPHER'S HANDBOOK. By Arthur Hope. The John Wilkinson Company, Chicago, Ill., 1891.

This is the third edition of a popular elementary treatise, and in its revised and enlarged form it contains all that the beginner is likely to need for several seasons' work. The author has the art of putting things in an intelligible manner, and there is an originality about many of his methods of work which gives the book a place in the rapidly widening field of photographic literature.

PHOTOGRAPHY AS A BUSINESS. By H. P. Robinson. Percy Lund & Co., Bradford, England, 1891.

A reprint of chapters contributed to the *Practical Photographer*. Mr. Robinson is too well known to American photographers to make it necessary for us to do more than mention a book of his in order to insure it a cordial reception. The author's long experience as a practical and successful photographer, and his pleasing style, combine to make the present work one well worth owning by every professional.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

THE KAMARET.—All the cameras made by the Blair Company have been marked by ingenuity in construction and adaptability for the purposes for which they were designed, and the Kamaret, their latest production, is no exception to the rule. In construction the Kamaret follows closely the lines of other high grade hand cameras, but it is much more compact than any we have yet examined, the 4 x 5 box measuring only $5\frac{1}{2} \times 6\frac{1}{2} \times 8\frac{1}{2}$ inches, and weighing only four pounds when loaded for one hundred exposures.

Fig. 1 shows the internal construction of the box, the dotted lines to the left showing the space occupied by roll holders of the old form which in the Kamaret is not needed, the roll holder occupying the space

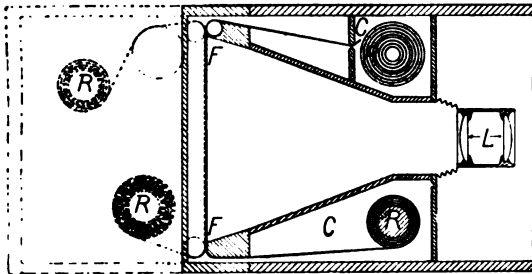


FIG. 1.

inside the box and in front of the focal plane usually not utilized. The Kamaret holder is remarkably simple and in place of the usual indicator to indicate the extent of the paper to be wound off, by a novel departure in construction a visible indicator is provided in the shape of a small hole which is punched in the film when the shutter is sprung, and which travels across a narrow slot at the back of the box, thus effectually precluding the possibility of any mistakes.

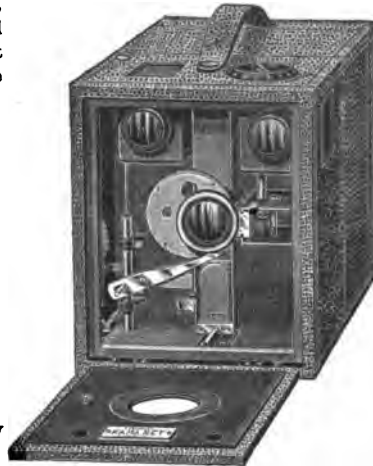


FIG. 2.

Fig. 2 is a cut of the front of the box with the front board let down, and shows the lens, shutter, setting and tripping device, automatic indicator for registering the number of exposures, etc. At a slight additional cost a double swing-back attachment can be applied to the back of the box when glass plates or cut films are to be used. The finders are unusually large and the box is covered with fine grained leather, and carried in a leather case opening at the end, allowing an exposure to be made without removing the camera from the case, the end of the latter being simply opened.

While we have had no opportunity of testing the working of the Kamaret we have seen a large number of fine negatives made with it, and as the lens is of the rapid rectilinear type working with a liberal opening, there seems no reason why the Kamaret should not prove immensely popular.

Subscribe for the American Amateur Photographer, the only Amateur Photo. publication not run by a dealer or society. Read what a well known dealer in Photo. supplies, at Philadelphia, says of it: "I do really think that your journal is the 'best out,' and recommend it as such."—JOHN HAWORTH.

From Newcomb & Owen, New York, we have received an attractively gotten up Catalogue of Photographic Supplies. We notice that they list only the best class of goods, and a number of specialties of their own manufacture. This young firm has come to the front in a way that demonstrates the value of pluck, enterprise, and square dealing.

The Bromfield Mat Sensitized Paper.—We have lately had an opportunity of testing this new paper, and we have been greatly pleased with the quality of the results. The manufacturer informs us that the paper, while a chloride of silver variety, is made by an entirely new method, which confers greater sensitiveness and better keeping qualities than is possible by the old method of salting and sensitizing. It requires no fuming, prints quickly, and can be toned to any desired shade in any of the usual toning baths, including the combined toning and fixing bath. Our best results were obtained in an ordinary acetate bath, and we found the paper to be nearly all that one could wish in a mat surface paper. A few of the sheets were imperfectly sensitized, and one or two developed yellow spots in the preliminary washing before toning. The former fault is easy of correction, and the latter may have been caused by a failure on our part to keep the prints in motion while washing. As the paper certainly keeps, requires no fuming, and tones readily to a dark tone, it should find a ready sale among those amateurs who prefer a mat surface to their prints. The Bromfield paper is sold by the Kalotype Company, which proposes to make a specialty of mat surface printing papers, and is, we understand, making arrangements to furnish the Bromfield paper in Japanese parchment for those who desire the artistic effect produced by printing on this paper, with a margin of India tint around the picture.





BY ADAM DISTON.

THE SMITHY.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

BOSTON, MASS., FEBRUARY, 1889.

Our Illustration.

IN REPRODUCING the photograph of Mr. A. S. Fife, Scotland, called "The Smiddy," which was one of his that won a silver medal at the New York Metropolitan Exhibition, we give some idea of the adaptability of the process to the representation of faces in nature, artistic pictures. The negative was made with success with a portrait lens, and the print was made by comparing this picture with the "Village Blacksmith," November, 1889, number of the AMERICAN AMATEUR PHOTOGRAPHER. George A. Nelson, we notice a totally different effect.

In our present illustration the ingenuity shown in every little part is especially noticeable, while the imitation of sparks sputtering at the point where the hammer strikes the anvil, are all naturally put in. It is a composition being posed and photographed separately from the man, and painted in. In its way it is remarkable, and will be of great aid in improving their knowledge of the art.

♦♦♦

Platinum Toning.

By W. H. BOGESS.

PHOTOGRAPHIC printing methods have attracted much attention and I have experimented with several of them that have ever been proposed. Toning is an important part of the photographic printing method, and naturally I have given much attention to some of the working of the many toning baths which have been recommended.

Chloride of gold has always been, and still is, the principal toning agent to the exclusion of other metallic salts when a deep, rich, scintillating color of the photographic image. In all cases, tones of a deep, rich, scintillating



THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

BOSTON, MASS., JULY, 1891.

No. 7.

Our Illustration.

IN REPRODUCING the photograph of Mr. Adam Diston, of Leven, Fife, Scotland, called "The Smithy," which was among a set of six of his that won a silver medal at the New York May exhibition, we give some idea of the adaptability of the science of photography to reproduce in nature, artistic pictures. The negative was made by the collodion process with a portrait lens, and the print was of silver toned with platinum. Comparing this picture with the "Village Blacksmith," illustrated in the November, 1889, number of the AMERICAN AMATEUR PHOTOGRAPHER, by Mr. George A. Nelson, we notice a totally different treatment of a similar subject.

In our present illustration the ingenuity shown in locating and grouping every little part is especially noticeable, while the position of the figure and the imitation of sparks sputtering at the point where the welding is supposed to occur, are all naturally put in. It is a combination picture, the figure being posed and photographed separately from the interior, then both are printed in. In its way it is remarkable, and should be studied by all interested in improving their knowledge of the art.

Platinum Toning.

BY W. H. BURBANK.

PHOTOGRAPHIC printing methods have, for many years, engaged my attention and I have experimented with nearly every method that has ever been proposed. Toning is an important feature of most photographic printing methods, and naturally I have made rather a complete study of the working of the many toning baths which have been recommended.

Chloride of gold has always been, and still is, the favorite toning agent to the exclusion of other metallic salts which are perfectly suitable as toners of the photographic image. In all cases tones of a rich purplish nature are

desirable, probably gold is the best toning agent, but, when one wishes to produce tones more nearly approaching engraving black, gold is not in the race, unless the printing is carried to such a depth as to make it extremely difficult to keep the shadows free from smokiness.

The peculiar richness of platinum back early called the attention of experimenters to the possible availability of this metal as a toning agent, but the early experiments were not, on the whole, successful, owing, in great part, to the strong bleaching action exercised by the baths employed.

The great stability of the salts of platinum has, from the very beginning of photographic printing, induced many experimenters to seek for a possible method of making it the basis of a more permanent printing process than was felt to be possible with gold or other metals. As early as 1832 Sir John Herschell studied the effects of the action of light on platinic salts, a line of experiments in which he was followed by Hunt, Burnett, Willis, and others, the latter succeeding in inventing the very beautiful platinotype process, which, for durability and artistic effect, remains in the front of photographic printing processes. The Willis's process is not, however, a toning process, strictly speaking, and labors under the disadvantage of giving only a feeble image in the printing frame.

The perfect printing process for general use would seem to be one combining the visibility of image of the chloride of silver printing out process and the stability of an image in platinum. Proceeding on these lines many experiments have been made to utilize a salt of platinum as a toner of the silver image on chloride paper.

M. Carranza, in 1852, seems to have been the first to use platinum as a toning agent, using a dilute solution of platinum chloride acidulated with hydrochloric acid, but the presence of the acid caused the bleaching of the prints. A little later M. Mercier discovered that, while the platinum toning bath must have an acid re-action in order to facilitate the precipitation of platinum by the silver of the image, the base of the bath must be a platinous, not a platinic, salt.

In 1890, Mr. Lyonel Clark worked out a practical method of platinum toning, and embodied the results of his experiments in a valuable little book on the subject to which I would refer my readers for a fuller statement of the chemical considerations governing the working of the process than I am able to give here. By his experiments Mr. Clark conclusively proved the truth of the position of earlier experimenters that the bath must have an acid re-action, and he further found that it did not work well with albumenized paper. Mr. Clark gives the following formula for the salting solution for plain paper:

Gelatine,	90 grains.
Chloride of ammonium,	60 grains,
Carbonate of soda (re-crystallized),	120 grains.

Citric acid (in crystals),	30 grains.
Water (rain or distilled),	10 ounces.

The paper is floated two or three minutes on the solution, and then hung up to dry, in which state it will keep indefinitely. The paper may be sensitized on a plain sixty grain silver bath, but Mr. Clark prefers the ammonio-nitrate of silver solution, as follows: Sixty grains of nitrate of silver are dissolved in one-half ounce of water; strong ammonia is then added until the brown precipitate first formed is re-dissolved. The mixture is then divided into two equal parts, and sufficient nitric acid is added to one part to give an acid re-action; the two parts are then mixed and the bulk made up to one ounce. This solution is ready for use at once, but only keeps in the dark. It is applied to the paper with a brush. The paper is printed until the high lights begin to show signs of degradation, remembering that plain paper prints lose more in the preliminary washing than albumenized prints. After printing, and before toning, the prints are washed in several changes of water to remove all the free silver, and are then toned as usual in the following bath:

1.—PLATINUM STOCK SOLUTION.

Chloroplatinite of potassium,	60 grains.
Distilled water,	2 ounces.

2.—TONING BATH.

Platinum stock solution,	1 dram.
Water to make	8 ounces.
Nitric acid,	3 drops.

Tone to the desired tint, and then throw the prints into water, made alkaline with carbonate of soda; then fix and wash as usual.

I have obtained remarkably fine results with this bath, but it has the disadvantage of soon spoiling, which, at the present high price of platinum, makes the method rather expensive, unless sufficient prints to exhaust the platinum are to be toned. A better method would seem to be to add a smaller quantity of the platinum stock solution, adding more when the toning action seems to flag; in this way there need be no waste of platinum.

What is wanted now in order to make the process complete is a method of preparing the toning bath in such a way as to confer good keeping qualities without impairing its toning power. Such a bath is said to be possible with biphosphate or phosphate of sodium, according to the formula given in Editorial Comment in this number. I can bear witness to the toning properties of this bath, and, to a limited extent, to its keeping properties. By the substitution of an equal amount of lactic acid for the phosphate of soda, a third excellent toning bath is obtained.

Still another method of producing an excellent platinum toning bath of good keeping quality is to reduce a platonic salt to the platinous state by means of suitable reducers, one of the best being neutral oxalate of sodium.

For this purpose thirty grains of tetrachloride of platinum, PtCl_4 , and nine grains of neutral oxalate of sodium are dissolved in twenty-six drams

of distilled water, and the solution is placed in bright sunlight for a few hours, with the effect of reducing the tetrachloride to platinic chloride, PtCl_2 , the reduction is complete when a permanent purplish-red color is reached, but the completeness of the reduction is easily tested by treating a drop of the solution with a drop of a saturated solution of chloride of ammonium; if the reduction is complete no precipitate will be formed. The bulk of the liquid is made up to thirty-six ounces with water and acidulated with nitric acid to form the toning bath.

Certain precautions must be observed with the platinum toning bath. The prints must be washed, and, above all, toned in weak white light, otherwise the whites of the prints are liable to show a yellow discoloration, since the chloro-platinite of silver formed by the action of the chloro-platinite of potassium on the free nitrate of silver is insoluble in water, and easily reduced by the action of light. In order to obtain pure whites, it is advisable, between the washing and toning, to place the prints in a solution of salt, and immediately after toning to treat them with a solution of carbonate of soda.

The printing must be deep since the prints lose greatly in the toning bath. The toning action is progressive, passing successively through purple and violet tones to a lilac-blue, which, after fixing, washing, and drying, gives the black tone.

If these directions and precautions are carefully and intelligently followed no difficulty should be experienced in working the process which has the great advantage of holding out a greater promise of permanency in silver printing than can be hoped for when gold is used as the toning agent.

Modern Methods of Illustration.

BY W. H. BURBANK.

THE PHOTOGRAVURE PROCESS.

PRINTS pulled from a copper plate are decidedly more artistic than those made by any other photo-mechanical method, but being engraved or etched like an etching, the copper plate can not be used for printing with type, but must be printed on the old-fashioned plate press. In an etched plate the shadows are impressed in the plate and high lights elevated. Hence, in order to produce a copper plate capable of re-producing, the gradations of a negative from nature, the heaviest shadows must be most deeply etched in order that they may hold the most ink, while the high lights are very slightly etched. It is customary to speak of copper-plate etching as an extremely difficult process, whereas the contrary is the case, as I hope to demonstrate in the course of this article.

Of the many methods of photo-etching which have been published, that of Klic is the simplest and the best, and the one best adapted to the amateur. The only drawback to the process is that it requires a knowledge of carbon

printing. This, however, is not difficult of acquirement, and the results are well worth the trouble taken to learn the process. The following is a list of the material and apparatus required to work the process :

- 1.—A negative worth re-producing, and a good transparency from it.
- 2.—A negative carbon print made from the transparency.
- 3.—A graining box to lay the ground.
- 4.—A flat metal plate heated underneath with a gas or spirit stove, and a pair of pincers.
- 5.—A copper plate, thoroughly cleaned and polished, for etching upon.
- 6.—A quick drying varnish for the edges and back of the plate.
- 7.—Biting fluids of different strengths.
- 8.—French chalk or whiting for polishing the plate.

Taking up these requisites *seriatim*, the negative demands consideration. Not every negative is worth the bother and expense of re-producing. The best negatives for the process are such as have a fair degree of density, with plenty of detail, and a small amount of heavy shadows ; in other words, a negative that would satisfy a good workman.

The transparency, from which the carbon transfer is to be made, must be the best the negative is capable of giving, not over-dense in the case of a half-tone subject, full of detail and with not the slightest trace of fog or veiling in the high lights. The transparency may be made by any process, so long as it meets these conditions, and it should be reversed by copying the negative, in the camera through the glass, that is, placing the film side of the negative furthest from the lens in copying. Before the transparency is printed from, it must be given a safe edge by cutting out a mask of black paper. Great care should be taken to have the lines of the opening true and square, since the margins of the etched plate are governed by the mask. The best kind of carbon tissue for this purpose is a light brown or sepia, and the tissue is sensitized and printed as usual. The tissue is developed and transferred to the copper in the usual manner, care being taken to center the image accurately on the copper with a slightly wider margin at the bottom. The metal plate requires no extended description, its purpose is to equalize the heat when the copper, after graining, is warmed to set the grain.

The graining box for small work need not be larger than eighteen inches high, ten inches wide, and eight inches deep, lined with glazed paper, and with a narrow opening running across the bottom about two inches above it. The slit is covered with a strip of stout paper pasted along the top of the opening. Two or three stout copper wires stretched tightly across the box at the bottom of the slit, about four ounces of finely powdered resin or bitumen, and a pair of small hand-bellows, completing the graining apparatus. A hole is bored in one side of the box near the bottom to receive the nozzle of the bellows. The copper plates, which should be somewhat larger than the picture in order to leave a good margin, can be bought ready planished

with beveled edges and rounded corners, but they will need a little preliminary cleaning with chalk or whiting, using water and a soft leather, and going over the plate with a circular motion, then washing them well under the tap. As soon as dried the plates may be grained. For this purpose the nozzle of the bellows is placed in the hole in the box, and the bellows worked rapidly to raise a good cloud of dust inside. After the coarser particles have settled, which will be in about a minute, the copper plate is placed on the cross wires and the slit is closed. After remaining in the box about four minutes the plate is carefully taken out, and it will be found to be covered with a thick coating of resin dust. The next step is to fix the ground by gently heating the copper over the warmed metal plate until the resin just melts, and no more, which can be seen by a wave of dark color passing over the film. The carbon negative print is now transferred to the copper and developed as usual. In transferring the carbon print great care must be taken to get it on the copper evenly and squarely, and for this purpose it is well to draw a line along the paper side of the tissue to mark the edge and corners of the picture, and also to mark the top of the picture.

When the negative picture is completely developed it is immersed for twenty minutes in a five per cent. alum solution, and then dried off with wood alcohol, a method of drying which clears up the image and gives a crisper effect than when the film is dried spontaneously. It is best to begin with a diluted spirit, equal parts of water and spirit, flowing it over the plate from one corner to the other, finishing up with stronger spirit. The plate is then set aside to dry in a horizontal position. In hot weather it is advisable to give the plate a final treatment with a mixture of one part of glycerine in twenty parts of alcohol, in order to prevent the splitting of the film in drying.

The resist varnish is made by dissolving one part of bitumen in twenty parts of benzole. The borders of the plate around the picture, as well as the back and the edges, are coated with the resist, and allowed to dry hard.

The etching solutions of perchloride of iron are used in five different strengths, as follows: No. 1, 50 per cent.; No. 2, 45 per cent.; No. 3, 40 per cent.; No. 4, 35 per cent.; No. 5, 25 per cent. These solutions are placed in a series of flat trays, and the plate to be etched is immersed in regular order, beginning with the strongest, No. 1, in which it remains about two minutes; it is then transferred to No. 2, for three or four minutes; then it is treated with No. 3, for two minutes; then into No. 4, for one minute, and, finally, No. 5 is allowed to act just long enough to begin to etch the high lights. A very good guide for the length of time the plate should remain in each solution is till the action of the chloride seems to stop. The etching should be concluded in about ten minutes. As soon as sufficiently etched, the plate is washed under the tap with a strong current of water, in order to drive out the perchloride as quickly as possible. The gelatine film is then

removed by gently rubbing it with a soft rag. After drying, the bitumen varnish is removed with benzole; the face of the plate is then rubbed over with whiting and ammonia, dried, and polished with alcohol, when, if the etching and other manipulations have been right, a proof print should show the plate to be in good condition for steel facing to enable it to stand a long run.

Some little experience is, of course, necessary to enable the beginner to turn out satisfactory plates, but the above description is believed to be sufficiently explicit to enable any one with a fair amount of judgment and manipulative skill to approach the subject with a reasonable certainty of mastering it.

Rough Surfaces and Their Preparation.

III.

BY W. H. BURBANK.

NOTWITHSTANDING the popularity of such papers as the Omega, Iota, Aristotype, and other glossy surface papers, there still survives a taste and liking for the old-fashioned silver print on plain paper, and its use is decidedly on the increase. One advantage of the process is that the rougher surface papers, such as drawing, Japanese, and crayon papers, can be used, and for large work give results which leave little to be desired from an artistic point of view. If it were possible to obtain these papers ready sensitized, or even only properly prepared for sensitizing, there is no doubt that they would soon come into more general use, but few amateurs in these days of emulsion papers and combined toning and fixing baths, care to take the trouble to salt and sensitize their own paper, even for the sake of more artistic results. There are a few, however, left in the land, who have not bowed the knee to the photographic Baal of fatal facility, and for them this article may have a slight value.

Most rough-surface papers will give fairly satisfactory results by simply being salted and sensitized, but the prints are somewhat brighter if a size is added to the salting bath. There are many formulas for the salting and sizing bath, but the following are known to be good and reliable.

I.

Frankincense,	10 parts.
Chloride of cadmium,	5 parts.
Alcohol,	100 parts.

II.

Chloride of ammonium,	100 grains.
Lactate of magnesium,	100 grains.
Gelatine,	10 grains.
Water,	10 ounces.

III.

Chloride of sodium,	125 parts.
Citric acid,	5 parts.
Irish moss,	25 parts.
Gelatine,	10 parts.
Albumen,	250 parts.
Water,	1000 parts.

IV.

Water,	16 ounces.
Gelatine,	16 grains.

Dissolve, and add

Common salt,	30 grains.
Chloride of ammonia,	50 grains.
Citrate of soda,	80 grains.

Paper salted on this solution, and sensitized, will keep fresh for months between sheets of blotting paper, which have been soaked in a one to twenty solution of carbonate of soda and dried.

All these solutions are filtered and the paper is floated on them two or three minutes. When dry, it is sensitized on a sixty-grain silver bath, or by being brushed over with ammonio-nitrate of silver.

The printing must be deep, and after being washed in several changes of water, the prints are toned in any of the following baths :

I.

Tungstate of soda,	20 grains.
Phosphate of soda,	20 grains.
Boiling water,	3 ounces.

Dissolve, and add

Chloride of gold,	1 grain.
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Allow to cool, and add

Water,	5 ounces.
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II.

Gold,	2 grains.
Hot water,	10 ounces.

Neutralize with precipitated chalk, and filter into a stock bottle in which two and one-half drams of acetate of soda have been placed, then make up the bulk to twenty ounces. This is a stock solution and improves with age. To make the toning bath, place a few ounces of water in the tray and add an equal quantity of the stock solution.

III.

Dissolve sixty grains of chloro-platinite of potassium in two ounces of distilled water. For the toning bath take

Stock solution,	1 dram.
Nitric acid,	3 drops.
Distilled water,	8 ounces.

Print deeply, wash well, and tone to the tint desired, then place the prints in cold water containing a little carbonate of sodium.

IV.

Chloro-platinite of potassium, 30 grains.
 Pure phosphoric acid, 80 grains.
 Distilled water, 1 quart.

If the bath works too slowly less water should be used.

In printing on this class of papers, the printing must be deep, the preliminary washings thorough, and the toning action not allowed to proceed too far. I have recently made prints on Japanese parchment paper, leaving a wide margin around the picture, which are far and away superior in artistic effect to the usual run of photographs, but the high price of the paper makes it an expensive luxury.

This is but an outline of the process, but it is sufficient to enable any one who has any knowledge of photographic printing to work with certainty of success, and there is no need of darkening counsel with many words.

The New York May Exhibition.

BY F. C. BEACH.

SECOND NOTICE.

EXHIBITS OF THE NEW YORK SOCIETY.

AT THE fourth joint annual exhibition held from May 25th to June 13th, at the Fifth Avenue Art Galleries, No. 366 Fifth Avenue, the exhibits of members of the Society of Amateur Photographers occupied the entire north wall of the main gallery and some space in the annex, and included forty exhibitors. Beginning at the right of the entrance from the main gallery to the annex we notice the work of the president of the society, Mr. James H. Stebbins, Jr., mostly 4x5's, in white or cream colored frames. In frame No. 210 b, "The St. Lawrence at Sunset," appeared to us to be the most artistic, showing brilliant cloud effects. He had two other frames, prints on his own mat surface silver-iron paper and prints on silk. Both were very well done and as technical work were interesting.

In Mr. E. Warrian's five bromide enlargements, developed with eikonogen, those called "A Bermuda Onion" (a darkey boy with his head poked through his hat) and a view near Gordontown, Jamaica, (very soft throughout and good choice of position) were the best. The others were inclined to be too snowy.

A single enlargement by Mr. Adolph R. Frank, of "John, the Orange Man at Harvard," was, perhaps, an excellent likeness, but not a pleasing picture; inclined to be rather hard. Evidently too dense negatives make the poorest enlargements.

Miss Elizabeth A. Slade had ten frames of different subjects. Those that were specially good were an enlargement, No. 221, "A Street Scene in Kampen, Holland," and No. 222, "An Old New England Road"; the latter, though without figures, was particularly soft and effective; Nos. 223, 224,

and 225, were all too hard; No. 229, an 8 x 10 enlargement of the "Midnight Sun," on close examination shows the grain of the film very badly: otherwise the effect is good.

In one frame, Mrs. Francis B. Arnold had three 6½ x 8½ views in Central Park. One in particular, looking south on the Mall, displayed excellent treatment of light and shade, and good technical work.

Dr. Perley H. Mason, as remarked in our first notice, showed four cleverly printed panoramic pictures made from separate 5 x 7 negatives. No. 234, "Entrance to the Highlands of the Hudson," was especially good, as it had so much life; on the river was the steamboat, in the foreground was a train of cars going into Peekskill, and a carriage in the road near by.

The most effective picture in Mr. Theodore C. Janeway's three bromide enlargements was No. 236, "Percheron Stallion."

Mr. T. J. Burton had in a fancily arranged frame a fair bromide enlargement from a 4 x 5 negative, called "Hard a Port."

In a large single frame by J. W. Wickersham was an assortment of views in various places. One called "Scene in French Market, New Orleans," was very clear; another, a group, at Oakville, Conn., was technically very good; the others were of ordinary merit.

Mr. A. L. Simpson had three frames; in one were his 8 x 10 Naval Parade views, showing the Boston and her flag flying at the stern; the other war ships and a yacht view; all were excellently taken and nicely printed. In No. 241, his "Police Parade and Review" was very good, as was also the flash light group in No. 248.

An immense frame, holding twenty-one 5 x 8, or near that size, pictures of artists and artists' studios in New York, by Mr. E. S. Bennett, was quite interesting, though most of the photographs looked over-printed. Those deserving special notice were "Walter Shirlow's Studio," "H. W. Watson's Studio," and "William M. Chase's Studio." As a whole, the prints were mostly too hard, and lacked snap.

Mr. L. B. Schram had five frames, mostly landscapes, of which No. 245, "A Shady Lane," was the best; it was soft, clear, and full of detail, showing the play of sunlight on the road.

Very large bromide enlargements by Mrs. Robert W. DeForest, made from her small negatives of views in Athens, displayed much artistic taste. No. 250, "The Old Olive Trees in Plato's Grove," was especially striking. Another, No. 251, "The Cathedral Steps, Bourges," evidently enlarged from an instantaneously exposed negative, was very happily arranged. The color of the enlargements was a sepia brown, somewhat different from the usual run. They were not made by Mrs. DeForest.

Mr. Otto Hesse contributed six small landscape views, printed on Omega paper, which were well done. No. 254, "Splügen Pass, Switzerland," and

No. 258, "On the Bronx," were the most attractive, combining excellent perspective with fine detail.

No. 260, "Fatine," a study from life after a painting by N. Sichel, quite a large figure study, very soft, nicely posed, and equally illuminated, by Mr. Edward Leaming, was one of his best efforts at portraiture. Furthermore, it was printed on plain salted paper, and possessed the mat surface which it gives. In another frame, No. 261, he had views of Edinburgh University and streets, all printed on Aristotype paper, untuned, which gave to them a peculiar yellow brown color. One of the prettiest was "An Old Suburb of Edinburgh."

Dr. Joseph Obermeyer sent eight frames of small pictures, all very good; No. 265, "Berchtesgaden," was an excellent mountain view; "Delight in Disorder," No. 266, was an original idea and a very nice study of a head; No. 268, "The Brook," was a good scene in the woods, showing fine detail, soft and clear. All those named were printed on Aristotype paper; the others were platinum prints and appeared to lack the richness in tone that we have seen. He appears to be a very clever worker.

The most striking views in Mr. S. S. Palmer's single frame were his "Passaic Falls, Paterson, N. J." All were made with a hand camera. The falls were a trifle over-printed.

Landscapes without figures were well brought out in several frames sent by Mr. H. M. Grisdale, printed in platinotype; No. 271, "Study in Foliage"; No. 276, "Waterfall, Adams, Brook, Pa."; No. 280, "Cloud Study"; all were exquisite in detail, soft and nicely done. He had also a frame of twelve snap-shot views about New York that displayed much variety.

We have already alluded in our previous article to the excellent and artistic work sent by W. H. Jackson of Denver, Colorado. He was one of the prize winners, and it is interesting to note that all of his successful pictures were developed with eikonogen. His Harlem River and Florida views were particularly attractive.

With four exceptions, all of Miss Catherine Weed Barnes's eight frames contained mostly portrait studies and genre pictures. In one large frame the "Songs of Seven" was illustrated, and it was extremely well done, displaying originality in pose, lighting, and arrangement of accessories. Under each picture was the verse in the poem it was intended to represent. Her other single pictures were "Song of the Shirt," "Cinderella," the latter quite an interesting picture; "A Study in White," much admired for the softness and fine detail in the white drapery; and a Japanese study, nicely arranged, grouped, and lighted. The other frames were mostly interiors and one an exterior of her "Garden Studio." One of a "Drawing-Room" interior was rich in detail, generally soft and very clear. Portraits and representative groups appears to be Miss Barnes's specialty, as well as being also a successful lantern-slide maker, in which line she secured a medal.

Adjoining Miss Barnes's pictures were nineteen frames by Mr. Alfred Stieglitz, all platinotypes by the hot process. Those which appeared to us as the best were No. 303, "Cortina," very clear and good; portrait of Professor Vogel, remarkably fine study, resembling a steel engraving; No. 313, "Loading Hay, Ampezzo Valley," interesting and well arranged; No. 317, "Sunlight Effect," representing a girl sitting on a hill-side, possessed a peculiar brown tone that was effective; No. 311, "At Biarritz," very good marine view, showing people seated in chairs on the beach, watching the surf; No. 318, "Before the Smithy's," intended to be a genre picture, displayed good judgment in arrangement, and was very clear; No. 319, "Study in Gray," very pretty snow study, soft and delicate. In nearly all cases, Mr. Stieglitz used orthochromatic plates and pyro developer. He has had much practice abroad in connection with the Vienna Institute of Photography. His work technically is excellent.

In a single frame, Mr. F. C. Beach had two 8 x 10 pictures and two 5 x 7's. "The Road Scene" in Connecticut was perhaps the most artistic. The others showed careful work, and good judgment.

Miss Emilie V. Clarkson exhibited a dozen frames of excellent work, her forte being figures and landscape. (322) "In the Clouds," a girl in a thin white dress, swinging, was gracefully arranged; (325) a composition group study entitled "Darby and Joan," was well lighted and expressive, but the fire appeared too white, not enough detail in the smoke. (326) "Focusing," a very amusing picture, representing the back of a young man and his affianced, supposed to be looking at the image on the ground glass with the focusing cloth over both heads. (329) "Just Out," a picture recently published in the *Photographic Times*, little chickens freshly hatched, in straw beside a box; very clear, crisp, and interesting. (332) "In the Apple Tree," two maidens comfortably seated in the tree, good portraits, and technically all that was desired.

It should be mentioned that Miss Clarkson made her prints on plain salted paper, some being toned with gold and others with platinum; the latter salt appeared to make the most artistic looking pictures.

Located in the corner of the gallery was one large frame (333) containing forty 4 x 5 views of Texas rancho life, by Dr. John T. Nagle; in the center was an enlargement of a typical cowboy. The views covered a variety of subjects and were interesting as showing up life in that country. In two other frames were views around Seabright, N. J., and on the Shrewsbury River. Two beautiful cloud studies were "Sunset, Oceanic, N. J.," and "Sunset at Claypit Creek," near the same spot. Most all were made instantaneously with the hand camera.

Mr. Haywarde S. Cozzens had two frames of photographs of scenes in New Hampshire and the Adirondacks, carefully done. His "Four-and-a-half Pound Lakes, was a very good fish picture.

Mr. H. N. Tieman's bromide enlargement, "L'Incrovable," while a good picture, was too chalky to be attractive.

A single frame of character studies by Mr. A. Clinton Wilmerding was very clear and telling.

Mr. Charles Balliard showed technically good work; his picture of an old lady and her grandchildren was nicely arranged and well lighted. An interior showing a canopy-covered bed was also good.

Mr. Ferdinand Ruppert had four frames of excellent work, all printed on aristotype paper, dried on ground glass, which gave a mat surface. His interior of two or three darkies sitting around a stove singing, called, "All the Comforts of Home," was especially good.

In the two frames sent by Mr. Paul Sala, of views in the Catskills and other parts of New York, we noticed two that were particularly attractive, viz., "The Devasego Falls," New York, and "Ausable Chasm," New York. They were technically good and very clear.

Mr. Robert L. Braeklow contributed six frames of landscapes and historical subjects; all displayed careful work; one called "Trees and River in Early April," and another, "The Plattekill Road, Ulster County, New York," were especially good. Several white frames of small pictures by Mr. D. Berger Young, of Brooklyn, N. Y., illustrated scenery on Long Island and Staten Island, N. Y.; all were technically very good.

In Prof. Henry A. Rowland's exhibit, alluded to in our June number, the "View on the Canadian Pacific, near the Glacier House," struck us as being excellent, particularly of the mountains. However, because of a thin negative, we suppose, the sky appeared to be printed too dark.

Mr. S. Eugene Sargent had one enlargement which was too hard, and another frame of different pictures, in which was an excellent photograph of a night blooming cereus.

Mr. Charles I. Berg, in his two frames, had some novel effects in posing and draping, which were of sufficient merit to win him a medal.

Mr. H. Herbert Sidman, in one frame had views of three of the principal statues in Central Park, that were very good; in another was a well-lighted and technically-good interior, while a picture of an "Old Milk House," in New York State, was technically fine.

A frame of interiors was shown by Mr. Frederick Vilmar, of fair merit; one called "A Bachelor's Den," was the best, well illuminated, interesting, and correctly timed.

Showing a large number of photographs of a similar subject in one frame, constructed to be especially conspicuous, was in the opinion of many, somewhat out of taste for an amateur having the artistic ability that Mr. Charles H. Davis displays in much of his work. In one frame we counted forty photographs. Among them was one called "Maiden Meditation," very happily arranged, which was illustrated in the catalogue. Several others were of one model in different poses and dresses. In frame (370) he had twenty cabinet photographs of heads and figures made by a window or door light, without studio appliances. Some of them were particularly good, soft, gracefully posed and equally lighted. In 371, 372, 373, were separate pictures; one, "A Good Story," represented one maiden at work spinning, while her friend was sitting down near by, reading; 372 was "An Interesting Climax," the maiden reading had risen, and pointing to the place in the book where the climax occurred, looked at her friend; it was very well arranged but the faces were a trifle hard. The "Summer Girl" (373), dressed in white was appropriately posed and evenly lighted.

The New York Society exhibitors numbered forty, out of a total membership of two hundred and sixty. A few of the best photographers did not exhibit, though an effort was made to have them. The honors were taken evenly by both members who reside in and out of the city. We suppose the city members care more for the social features of the society, rather than in exhibitions of actual work—which is to be regretted. It is to be hoped that the fine work shown by other clubs and foreigners will encourage the New Yorkers to do better things next time.

Few persons were aware of the large number of photographs on exhibition—something over 1,300 by actual count.

In addition to the awards reported in the June number, medals have since been awarded to Hetherington & Hibben of Indianapolis, Ind., for excellence in photographic apparatus, to Charles Beseler of New York for excellence in optical lantern apparatus, and to the Clark Electric Company of New York for excellence in electric optical lantern apparatus.



Figure Studies at the New York Exhibition.

BY CATHERINE WEED BARNES.



ONE of the most remarkable facts connected with the recent Amateur Photographic Exhibition in New York was the increased number of figure studies over those in previous American contests. There is so much landscape work done now that a variety at such times is desired and the former must be exceedingly good to suit the critical judgment of intelligently thoughtful camerists. Indeed, the general public looks at photography from a very different standpoint than it once did. In speaking of figure studies I do not mean those landscapes into which they are introduced to help the composition, but those in which they form the *raison d'être*. There were several portrait studies which, however good technically, failed artistically in being too large for the plate. In two or three cases, there was hardly any margin around the head and in others the hat brim was partly cut off. Why not, if a large head is desired, use a larger plate. It would satisfy the eye much better. The English pictures excelled the American in this respect. The camerist who works mainly in this branch of work is apt to forget another thing, which is, that the hands, in posing, must be very carefully managed and require special pains. It is so easy to have them out of proportion. Some otherwise beautiful pictures were thus spoiled and the saying that the curve line is the line of beauty was overlooked much too often as regarded the arms. The right or acute angle at the elbow might be often easily concealed by a little extra care and even a cursory study of anatomy would be of vast benefit to photographers in a knowledge of the muscles of the human figure. When the time comes for them to study such things as does the painter and sculptor the average of portrait and figure work will wonderfully improve.

I cannot too often repeat that, in genre pictures or illustrations, the last thing to be considered is the question of likeness. That has absolutely nothing whatever to do with the picture. The sitter is supposed to be Charlotte Corday, Queen Mary, Sir Lancelot, and not Miss A. or Mr. B. This delusion is so firmly rooted that I almost despair of removing it. One other point is to have the head follow the direction of the eyes; if the face turns to the right make the eyes do the same, not allowing the whites of the latter to be too apparent, and, if a profile is wished, have it a decided one. Very often, enough of the cheek furthest from the lens is shown to look like a swelling, or the eyelashes project awkwardly beyond the nose. People usually have very positive ideas about the way they should be taken, but in figure work, pure and simple, the artist should decide. The idea that to be artistic the figure or face ought to be out of focus cannot be too severely condemned. In this, as in other art questions, the golden mean is desirable, and poor photographic work is not, necessarily, good art. It means careless

working or a poor lens. There is a very prevalent idea among a certain set of painters that, to be beautiful, a picture must be almost wanting in what a photographer would call density. Such pictures resemble the one in the old poem, where you "kept on seeing nothing at all, as far as the far horizon." Geniuses are rare and only a genius can afford to carry this theory into practice. It will, in a majority of cases, be considered as justifying poor work and, if the idea gains footing among photographers, we may bid farewell to conscientiously executed work, while those who believe in a judicious blending of detail and softness may as well dispose of their carefully selected lenses and save themselves much time and trouble by discarding the use of graduates, scales, and hydrometers in the developing-room. The faithful workers will grow discouraged and the lazy ones jubilant.

Figure studies are the most difficult subjects the camerist can attempt, but, if he is clear-headed enough not to be influenced by the clamor on the one hand for lack of detail and on the other for excess of it, he will find infinite satisfaction in the work. It is a hard place to fill, that of judge at an exhibition, as painters are apt to be prejudiced in one direction and photographers in another. They must learn to come out of their own special shells and change places sometimes to fairly judge camera work. The judges at the recent Vienna exhibition excluded every portrait, no matter how well executed, if it had not what they called positive art value. The line was very closely drawn, only about one-eighth of all prints sent in being accepted as eligible for competition. The awards were to be made only after this rigid sifting of material. In New York, the limit of admission was not so sharply defined and the judges were to act after the pictures were hung. Among the best examples shown at the latter exhibition was work by Alfred Stieglitz, notably "Little Innocence," remarkable for expression, and his portrait of Professor Vogel was a fine model for all ambitious students. A. G. Tagliaferro, of Malta, Italy, had some good figure studies, and Alfred Werner, of Ireland, had three large and remarkably fine platinum prints which would bear long and careful study. The best of Mr. James L. Breese's work was a portrait, No. 425, but the others seemed rather over-exposed. Douglass Pym, of England, had two prints in frame No. 198 which would reward examination, but were a trifle too dark. Mr. and Mrs. S. F. Clarke, of England, each had one exhibit specially worthy of praise, "The Queen of Hearts" and "There's nothing half so sweet in life as love's young dream." Adam Diston's "Smithy" was a picture which grew on one, and No. 137 of Mr. G. H. Eaton's portraits was very good. In Mrs. J. O. Wright's exhibit, "Il Penseroso" and "June" were, perhaps, the best. John C. Lee of Brookline, Mass., had three figure studies noticeable for their excellent lighting. Clarence B. Moore, of Philadelphia, in Nos. 30 and 31, set an excellent and excelling example to all camerists who attempt figures, and his "Give Us a Suck" was fine. "Triplets," by James L.

Dillon, of the same city, would have been better if taken at an angle. Charles Balliard's group of an old lady with her grandchildren was very interesting, as was Charles Davis's "Farmer's Daughter." "The Cathedral Steps, Bourges," by Mrs. R. W. DeForest, was good in its management of half-tones. "Delight in Disorder," by Joseph Obermeyer, was a pleasing study, as George B. Wood's "In Confidence" would have been if the figure to the left had appeared to be in a more comfortable position. His "Watching Grandma Smoke" was far better. Charles I. Berg, one of the prize winners, seemed to have a preference for acute angles and straight lines, although his work, otherwise, was good. William W. Renwick made an excellent showing in No. 436, though the different poses very closely resembled each other. "Fairy Tales," by Madeline Smith, would have been excellent if a little more sharply focused. Several of the prize pictures, not being figure studies, cannot be mentioned in this article, but those who tried the latter and failed to win recognition need not, therefore, feel discouraged, if they worked faithfully, trying to convey an idea, and following the guiding star of a real inspiration, not an *ignis fatuus* which would lead them away from their manifest destiny in the shape of landscapes, interiors, or snap-shots as the case might be. In one of Mrs. Whitney's stories, a young woman says she failed to succeed as a girl because she *would* drive her screws with a hammer, and there are many camerists who might make fine landscapes or other work, but who insist on keeping to portraiture. While portraits can be made in an ordinary room, they can never equal those made in a studio, and only in the case of certain character studies is snap-shot work allowable. The half-tones so dear to a painter's heart can be gained only by carefully training the eye under the sky-light in constantly varying situations, by thoroughly understanding the theory and practice of development, and, where retouching is needed, using it with the greatest discretion. Much as figure studies have improved of late, there is, fortunately, little chance of those who undertake them ever being justified in saying that there are no more worlds to conquer. There is every reason to feel encouraged from the result of the late exhibition, and it is worthy of remark how many women were represented on its walls. Their work was excellent, especially in its suggestiveness, and promised to make them strong competitors in future contests. The criticisms I have made are for faults which can be remedied and as most of my own work is in this special branch it appeals very strongly to my attention and I have its improvement greatly at heart. Let me urge on all camerists to enter every contest likely to be difficult, letting the easy ones alone, for they can only foster self-esteem, and there is nothing so good to reduce any excess of this mental quality or encourage modest workers as seeing one's pictures side by side with what is conceded to be superior work.

Toning Solution—Sulpho-Cyanide.

By M. Y. BRACH.

IN THE May number of the AMERICAN AMATEUR PHOTOGRAPHER, the reference to the use of a sulpho-cyanide of ammonium in a combined toning and fixing solution, both for Omega, Aristotype, and Iota prints, speaks of the disadvantage of its acting slowly on the deep shadows, so that in landscapes thus toned the distance is often of a bluish tone, while the foreground is brown. I have not met this disadvantage in using a solution prepared from the following formula :

1.—Hypo, 10 ounces; and water to make 36 ounces. When dissolved, add 4 ounces of powdered alum.

2.—A. Sulpho-Cyanide Ammonia (imported), 1 ounce, dissolve in 8 ounces of water.

B.—Dry chloride of gold, pure, 15 grains.

Chloride of ammonia, 60 grains.

Dissolve in 2 ounces of water.

Add B to A in small portions, shaking after each addition till the precipitate formed is re-dissolved, then filter. This solution should be clear and colorless, and be kept in a yellow bottle.

3.—Nitrate of lead, 90 grains.

Water, 2 ounces.

In mixing these stock solutions for toning a batch of prints, use for :

Warm tones.—1, 8 ounces; 2, 2 ounces; 3, 2 drams; water, 6 ounces.

Purple tones.—1, 8 ounces; 2, 3 ounces; 3, 4 drams; water, 5 ounces.

Cold tones.—1, 8 ounces; 2, 4 ounces; 3, 4 drams; water, 4 ounces.

My experience with this solution has been limited to Omega paper only. In making up the stock solution, double the quantity of solution No. 1 was prepared. In toning prints, one-half the quantity called for in the formula will suffice for toning and fixing dozens of prints. The cost for the chemicals in this quantity of stock solution was 75 cents, the 15 grains of gold costing 50 cents.

Portraiture by Amateurs.

By JULIUS WILCOX.

AMATEURS generally keep clear of portraiture; yet to some it is attractive, and perhaps an account of my simple accessories may be useful.

The shutter is useless for portraits, and all notion of making them by direct sunlight and snap-shots is idle. A chair and head-rest are indispensable; adults can with difficulty, if at all, hold one position during focusing and exposure, and children simply cannot. To expose on the little people without a head-rest I found a waste of materials; so I made one. The basis was a starch-box, 16 x 12 x 10; this, to increase height from floor and give stability against rocking by the push of the feet, I bolted to two stout strips

of stuff four inches wide and twenty-one long, so that the seat is sixteen inches from the floor, which is a very good average height. To what was the bottom of the box, after strengthening it by attaching a strip within, I fixed my back, which is of inch stuff about four inches wide and twenty-eight inches long. The head-rest is an L-shaped piece on top of this, the long arm of the L representing the portion which is adjustable on the back piece, and the head-rest proper is simply a sort of crescent-shaped piece of pine, fastened by set-screws so that it can turn, this being on the end of a short piece which is movable horizontally on top of the short arm of the L. I use quarter-inch screw bolts, and the parts have easy and ample adjustment. The thing is very readily and simply made, and its cost in money was about fifty cents. In the slang of the day, it "gets there all the same," and does it "every time," which is all I intended. The room I have to use is about sixteen feet square, fortunately high of ceiling. The windows are two, facing south almost to a line, and behind the window I use is a space of thirty-two inches from the wall. I place the chair in line with the back edge of the window, and about a yard back from the glass. For background, not wishing to be at much outlay, I use a painted shade, and I have as yet no better way than to suspend it by a stick from the top of the door-frame. For reflecting-screen (an indispensable and rather troublesome accessory) I made a jointed frame of lath, which will fold up and stand in a corner, and on this I hang a piece of white paper, map-fashion. I use Cramer B plates (sometimes the C for very small children) with nearly the full opening, and an exposure of one and one-half to six seconds. My operating time is afternoon, when the sun is away from the windows, and I have made good plates thus as late as 3.30 p.m., in midwinter. I use a Hawkeye camera, with Taylor & Hobson English lens.

Of course these conditions are as circumstances make them for me, not as I would have them. My work does not satisfy me, and yet it is equal, irrespective of conditions, to considerable professional work and better than some. It does not approach the best of professional work, and with my apparatus and conditions no skill could make it so; yet I would not fear to exchange with any professional in the city for a fortnight, he to take my "place" as he finds it and I to take his, on a contest to see which would produce the better results.

Mounting.

MANY a good print has been ruined by poor mounting. Many an amateur who has the skill to make a good negative and a satisfactory print balks at the mounting, contenting himself with getting his print on some kind of a mount in a haphazard sort of a fashion which destroys the effect of his previous good work. To most amateurs mounting seems to

be a necessary evil to be put through and done with in the quickest possible manner regardless of consequences. This careless method of working is not conducive to the best results and a poorly mounted print is shorn of half its beauty. The mount is to the print what the party dress is to a fair maiden, a heightener of native charms and an added source of attraction to the eye. For this reason too much thought can hardly be given to such matters as the color and size of mount best suited to a given picture, the trimming of the print to the best advantage, and other details of like nature.

Most prints need a vigorous pruning to reduce them to their best proportions, and amateurs need first of all to learn the relation of form and proportion to beauty, but for the present we will let this pass, and, taking it for granted that the prints have been properly trimmed, we propose to say a few words on mounts and mounting. Nothing adds more to the effect of a print than a mount of generous proportions showing a goodly margin around the picture. A margin of from three to five inches is none too great for effective display; a trifle wider space should be left at the bottom of the print in order to give room for writing in the title.

The color of the mount is another item for serious consideration, and is largely conditioned by the prevailing tone of the prints. Most gold-toned prints look best on a tea or gray tint, very few indeed take kindly to white, a tint which seems to give an air of harshness. Striking colors, such as terra cotta, maroon, etc., are best avoided, save in exceptional cases. Bromides and platinums look best on mounts of warmer tone. The best method, and the one most rarely employed, is either to mount the prints on heavy Japanese parchment paper, or on India tint mounts, the objection to the latter being that the tint being of uniform size, one has little or no control of the width of the tinted margin. A very effective method is to mount the prints first on Japanese paper, leaving as wide a margin as may be desired, and then to mount the whole on a white card of larger size.

Many amateurs fail in centering the print on the mount. With the smaller sizes any one with a decent eye can center the print, but when larger prints are dealt with a good mounting board will prove serviceable. One of the best forms of mounting boards is made by pasting a sheet of white paper on a smooth board somewhat larger than the largest mount likely to be used. When the paste is dry and hard, diagonal lines are drawn from corner to corner of the paper intersecting at the center. Points equally distant from the center are marked on the diagonals, and with these as guides a number of squares are drawn, each one about one-quarter of an inch larger than the next smaller. Each line is numbered from the center, the four sides of each square receiving the same number. It will be seen that an arrangement of this kind affords an easy means of accurately centering both the print and the mount. The paper should be given three or four coats of shellac, in order to make it impervious to moisture.

The method of using the board is easily understood. The print is given a coat of paste and then placed face down on the board and centered in both directions by means of the vertical and horizontal lines of the squares, the mount having been previously centered in the same way and removed from the board. It is now an easy matter to place the mount over the print by bringing one end against the line already found to bring the center of the mount over the center of the board, at the same time bringing the top of the mount against the top line previously ascertained. The mount is slightly curved and brought in contact with the print, a slight pressure insuring adherence. The mount and print are now removed from the board and the print rubbed into close contact as usual. A slight improvement on this form of board is made by cutting two narrow slots near one end and running towards the middle of the board. These had best be on the left of the board and at equal distances from the top and bottom. By means of thumb screws a straight edge is attached to this end and serves as a guide to the mount, the end of which is brought up against the straight edge previously fastened at the proper line. When the prints are all nearly of the same size, a simpler method is to cut an opening slightly larger than the prints in one of the mounts and to lay this down on the mount; it is then an easy matter to center the prints.

The mountant is another important matter, since on its good quality depends both the adherence of the prints and their durability. When heavy cards are used nothing is better than starch paste when it is properly made. A reliable mountant of this description is made by dissolving half an ounce of starch in one dram of cold water and pouring it into six drams of boiling water. The paste is then boiled, constantly stirring, until it assumes a bluish transparent appearance. As soon as cool the paste is ready for use after being passed twice through a fine meshed cloth.

A good anti-cockling mountant, which requires no heating, is made by dissolving fifty grains of macerated rubber in four ounces of benzole, giving the mixture plenty of time to effect solution and thinning it down to a good working consistency if necessary.

If these simple directions are followed no difficulty will be experienced in mounting prints in a highly satisfactory manner. If the India tint mounts are used, the effect is improved by writing the title and the artist's name on the tint with a pencil, something after the style of *remarque proofs*.

Artistic Photography at Vienna.

THE new idea carried out at Vienna by which the hanging committee should act as judges in advance, and throw out photographs that did not possess some special art merit, has resulted somewhat singularly as regards the American exhibits. The management, we believe, agreed to pay the expenses of transportation both ways, but reserved the right to

reject any pictures they saw fit. Men high in art were selected as judges. The report comes that out of 40 American exhibitors contributing 350 photographs, 30 were thrown out with their work, and but 25 photographs of the 10 accepted, were hung, as follows: Exhibitors from New York: James L. Breese, 2; Alfred Stieglitz, 5; Miss Mary Martin, 1; Harry Reid, 1. From Rochester, N. Y.: John E. Dumont, 6. From Philadelphia, Pa.: John G. Bullock, 2; George B. Wood, 5. From Chicago: Mrs. N. Gray Bartlett, 1. From Buffalo, N. Y.: H. McMichael, 1. From Lowell, Mass.: George A. Nelson, 1. Among Mrs. Bartlett's pictures was "At the Spring," illustrated in our June number.

With the exception of one exhibitor from Philadelphia, we should judge from the above named awards that portrait and composition group pictures took preference over any others. None but the highest class of artistic work was accepted. We hear three duplicates of each picture that was hung are wanted for permanent preservation in two or three of the oldest galleries. Of all the foreign exhibitors the English photographers took the lead in point of numbers. Several pictures by Mr. G. Davison, of the London Camera Club, were accepted as well as others by Robinson and the leading English amateurs.

We sympathize with those of our American brethren who were not honored, believing that art tastes differ in different countries, and that while their work may not be justly appreciated abroad it will be at home. We must congratulate the successful ones that the art merit of their work corresponded with the views of the judges. Most all have been prize winners here, and it is good to know that American judges are not, after all, far out of the way.

A Blue Book for Amateurs.

BY WALTER C. HARRIS.

JUST a year ago the writer procured from a friend the use of a 4 x 5 camera, with a good lens, intending to make a few negatives partly for "the fun of the thing," but more especially for their future value as souvenirs, being pictures taken in a college town.

About twenty good negatives were the result of this first attempt, and soon gift prints from them were in demand. As a matter of economy the blue-print process was tried, and with good success except at the start. The first prints were made on a good quality of sized paper procured at an art store, but as it was not "C. P.," the high-lights in the resulting pictures would invariably acquire a blue tint. Plain Saxe was then tried, and has been used continually ever since, giving pure and permanent whites.

Soon sets of prints were desired by friends, and the blue book scheme was devised. Sheets of two-ply bristol board were cut into pieces $5\frac{1}{2} \times 7\frac{1}{2}$

inches, upon these the views were mounted, and a set was bound under a suitable cover by means of a silk cord passing through holes punched in the left-hand ends of the cards.

An inexpensive and attractive way to print the cover is to procure tracing paper such as is used by draughtsmen, cut a piece the size of the plate used, and draw upon it with crow-quill pen and some opaque ink—draughting ink is preferable—the design desired; paste this paper by its edges, face down, upon an old plate, from which the gelatine coating has been removed, and print from this as from an ordinary negative. The pictures were printed on plain Saxe, and then mounted, principally for the reason that larger printing frames were not at hand for direct printing. By having printed directly on the cards much of the work might have been saved, the only difficulty being in the quality of the cards used.

After mounting and drying, a pile of prints should be put under pressure in a letter or copying press, and allowed to remain there until they have no tendency to curl when taken out. When they are ready the subject of the picture is written or printed on the card, the pictures are sorted and bound and are ready for gifts or for sale.

Foreign Correspondence.

THE MUNICH SOCIETY.—INGENIOUS FLASH LIGHT APPARATUS.

In sight-seeing through Europe, I have found the best plan is to map out short trips, of two or three months' duration at a time, and carefully study the ground beforehand; in this way the places of interest are seen systematically and profitably. In Rome it is a common occurrence to have one's pocket picked when stopping at a hotel. Having strong personal prejudices against the Italians and their way of dealing with foreigners, I somewhat dreaded travelling in that country. But after seven and one-half weeks' stay, I am obliged to state in justice to its people that I left with a feeling of regret at not being able to remain longer. I learned sufficient of the language to even swear at the beggars, when required, with the greatest ease. As far as my time has permitted, I have developed as I went. My special trunk, fitted up for conveniences for developing, has rendered me great service—would not know what to do now without it.

Having exhausted my supply of American plates, I now use German plates, especially ordered for me at the factory, out to fit my holders. I intend having my holders altered to fit the standard German size, 9 x 12 centimeter plates, in order to avoid carrying so many plates with me. The 4 x 5 English plates cannot be bought anywhere on the continent.

During my trip in Italy, I may mention that though the weather was bad when at Naples and Pompeii, yet I secured several negatives of interesting points, and especially some of Vesuvius. I took part of the crater, which at that time was quite active throwing out stones and large red-hot cinders in great profusion. One of the latter, weighing a few pounds, fell within four feet of where I stood with my camera. To take the crater requires an 8 x 10 plate and a wide-angle lens. Successful exposures were made in Rome, Florence, Pisa, and Venice.

Going into Bavaria at Munich, I found a great deal of sight-seeing to do, but was fortunate in finding the officers of the Munich Photographic Society, and was invited to attend one of their meetings. I was well received and had an enjoyable time. Their meetings are something on the style of the smoking concerts given by the New York Society of Amateur Photographers. I exhibited a few of my own lantern slides to several of the

members present, and found they were very much interested, so much so that it is possible they may try their hand at it. No plates suitable for slides appear to be made in Germany; they have to be imported from England. They have occasional lantern-slide exhibitions, using for the purpose mercantile slides. The meeting, or rather the sitting, lasted until one o'clock in the morning.

A leading member of the society, Mr. Henry Traut, has the principal photo atelier in Munich to which I was invited. It is perfection in all its details. He showed me many new and interesting contrivances, among which was a novel flash-light arrangement, consisting of three separate kerosene lamps having double wicks each, enclosed in a hood of tin on three sides and glass on the fourth side. The lamps are supported on stands and can be readily adjusted to any height. They are arranged in a semi circle a little to one side of the sitter. The arrangement for firing the charge is very ingenious, and is exactly simultaneous from the three lamps; only one bulb is used.

Dresden, May, 1891.

C. S.

The Opinion of the Press on the Fourth Annual Joint Exhibition.

THE AMATEUR PHOTOGRAPHERS.

In the comfortable lodging house of art which is situated between the Manhattan Club and the New York Club in Fifth Avenue, there has just been held a picture show of peculiar interest. The New York Society of Amateur Photographers, the Photographic Society of Philadelphia, and the Boston Camera Club, join in a public exhibition occurring annually in rotation among the three cities. The exhibit this year comprised the best products of the cameras and printing frames of many of the most progressive, enthusiastic, and successful amateur photographers in America; and side by side with these were hung representative specimens of the skill of such English artists as F. P. Cembrano and H. P. Robinson, Harry Symonds and Richard Keene.

The proportion of foreign exhibits this year has been surprisingly large. About one-quarter of all the exhibitors were British or Continental photographers, and out of the twelve or thirteen hundred prints shown, at least one-sixth came from across the water. This circumstance has enabled every visitor to the Fifth Avenue Galleries during the past fortnight, to judge for himself of the comparative excellence achieved by the American and English Schools; for in spirit and in method, in artistic temperament and in technical execution, the two groups, on the whole, are quite distinct.

The marked but not easily described distinction between the best landscape photography of the English amateurs and the equivalent performances of our own experts, sometimes has been attributed to the difference in the conditions of the sunlight and atmospheric moisture. It would be interesting to inquire how far results are affected in that way, but the climate does not account for all. The American amateur, photographing in England, Scotland, or Wales, is likely to be an American still in the quality of the pictures he produces; and the converse is true, we suppose, of the Englishman in the valley of the Juniata, in the Yosemite, or in the Garden of the Gods.

The explanation probably is that while the Americans and the English have been working out progress in photographic art on the same general lines, the respective results have been influenced by race characteristics, independent theories and traditions of treatment and manipulation, local preferences as to process, both in the development of the negative and the printing, and differences in the manufactured implements and material employed, much more potently than by the meteorological conditions which confront the camera. It is natural to expect that the divergence will increase in the future, and that the American standard will depart still further from the English, instead of striving to approach and imitate it. It is better that it should be so, in this department of æsthetic endeavor, just as in any other.

The discussion of amateur photography as if it belonged to the fine arts, and as if the taking of a picture were not merely a mechanical pursuit in which due care and attention to details produced invariable results under given conditions, will possibly cause amusement

in the minds of some readers who associate the word photograph chiefly with the Coney Island tintype, or the twelve-for-a-dollar out-put of the East Side studio. We are sure that no person who visited and critically observed the recent exhibit in the Fifth Avenue Galleries, will take this view of the subject. Even the sluggard or very busy man who presses the button, intending to let somebody else do the rest, has the opportunity to prove himself an artist. There is hardly a greater margin for artistic success or failure before the translator of nature who takes in hand the pencil or the etching needle than invites him who goes forth with his camera prepared to exercise from the first step in the complicated process to the last, his individuality not less than his acquired skill.

The meritorious pictures exhibited last week—and the poor pictures and conventional stuff, whether by Americans or Englishmen, were not in the majority—afford good enough evidence that photography is an art. They also prove what is already known to everybody at all familiar with recent photographic progress, namely, that in the cultivation of this interesting art the most intelligent and expert of our amateurs need fear no comparison with the highest standards set by professional skill, American or foreign. We congratulate the New York Society of Amateur Photographers upon the success of its exhibition.—*New York Sun, June 8, 1891.*

It is perfectly safe to say that photography never had a better showing than was made at the Annual Exhibition of Amateur Work at the Fifth Avenue Galleries, which closed on the 6th inst., after a successful season of three weeks. The exhibition was the result of the combined efforts of the Photographic Society of Philadelphia, the Society of Amateur Photographers of New York, and the Boston Camera Club, assisted by other American and several foreign exhibitors, the exhibition being given under the auspices of the New York Society. Each year the above societies combine in an annual exhibit, the object being to bring together at one time the best work done by the amateurs of the country. A series of very instructive lectures has been a feature of the recent event, and in every respect it proved the best of the four annual exhibitions which have taken place. Considerably over 500 exhibits were made, many of the frames containing from ten to twenty-five pictures. A number of foreign artists were represented by admirable work, and contributions were sent from several cities of the East. Very creditable work was sent by ladies, much of it showing nice artistic sense in posing, grouping, etc., as well as fine technique. It is well known that ladies make the most enthusiastic and persistent amateur photographers in the world, while the work exhibited at the Fifth Avenue Galleries proves they are not behind the average man in technical skill.

Prize medals were awarded as follows, the judges being Thomas Moran, Will H. Low, and Edward Bierstadt:

H. P. Robinson, Tunbridge Wells, England; J. P. Gibson, Hexam, England; Frank M. Sutcliffe, Whithy, England; Adam Ditson, Talbot Studio, Seven Fife, North Britain; F. P. Cembrano, Richmond, Surrey, England; C. Court Cole, Oxford, England; Martin J. Harding, Shrewsbury, England; Richard Keene, Derby, England; W. H. Jackson, Denver, Col.; Edwin H. Lincoln, Cambridgeport, Mass.; John H. Tarbell, New York; Robert S. Redfield and Alfred Clements, Photographic Society of Philadelphia; James L. Breeze, New York Camera Club; Charles I. Berg and Alfred Stieglitz, Society of Amateur Photographers of New York; and George A. Nelson of Lowell.

Medals for best lantern slides were awarded to Miss Catherine Weed Barnes, Charles L. Mitchell, and George W. Wilson.

Amateur photography deserves commendation and encouragement for the work it does in awakening the art spirit and cultivating the perception of artistic possibilities. As an adjunct to general art culture it has a high mission. Not that every one who takes a "snap shot" at some unconscious human subject is or can be an artist, but it is more than true that a serious practice of the art for worthy objects does enlarge the faculties and sharpens the vision in perceiving artistic beauty. It is an art which cannot be conscientiously pursued without permanent benefit; and in cultivating it a better and higher appreciation of all art is unconsciously imbibed, which must eventually raise one's ideals and standard to a much better and enjoyable level. All of this was at once evident to the visitor at the late exhibition.—*Youga's Art Folio for June.*

THE
AMERICAN AMATEUR PHOTOGRAPHER.

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W. H. BURBANK.

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F. C. BEACH, NEW YORK.

CATHERINE WEED BARNES.

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EDITORIAL COMMENT.

An Apology.—We feel that we owe our readers an apology for the vexatious delay in the appearance of our June number. The copy was in the printers' hands in ample season, but owing to a series of unforeseen accidents the press-work was unavoidably delayed, as much to our annoyance as to our subscribers'. Even with the best intentions it is not always possible to be on time, but we hope to have no more prolonged delays.

The Identification of Colors in Objects Photographed.—At the April meeting of the Photographic Society of Philadelphia, Mr. Julius F. Sachse read an interesting paper describing a possible method of identifying the colors photographed. The method consists simply in photographing a color key in connection with the object, and is particularly applicable to natural history objects when it is desired to furnish some indications of the colors of the objects. In Mr. Sachse's experiments various brightly colored moths were photographed, and the color key was made by pasting squares of tissue paper, corresponding in color to the tints of the moths, on the same card

on which the latter were mounted. It is evident that if the colors are well matched and the illumination even, the tints of the key will photograph in the same intensity as those of the objects, and will thus furnish the observer with a rough guide to determine the colors. The method seems to have much to recommend it, and some of our readers who are trying this class of work may find it of advantage to them.

Hardening Bath for Prints on Gelatine Paper.—The wide-spread use of gelatino-chloride paper and the danger of the surface softening in warm weather, makes a good hardening bath desirable. The following has been found satisfactory:

Water,	1,000 parts.
Tannic acid,	1 part.
Chloride of sodium,	10 parts.
Saturated solution of potash alum,	100 parts.

The bath is used only after the prints are fixed and well washed.

Photo-Mechanical Prints with an Ordinary Copying Press.—Our recent article on "Collotype Printing for Amateurs," has brought us so many letters of inquiry that we are convinced of the great interest now being taken in this class of work, and as supplementary to the article we print the following description of a method used by Mr. A. V. Lavroff, a Russian amateur: "On a thick sheet of glass I obtain a cliché by means of bichromated gelatine, which, after developing, I leave to dry at the ordinary temperature for twenty-four hours, after which I flood it with the following damping bath:

Water,	100 c. c.
Glycerine,	200 c. c.
Hyposulphite of soda,	2 grammes.

"This is allowed to act from one to two hours, according to the desired relief. Then I remove the liquid from the glass by means of a very soft pad and blotting paper, and then I ink up the cliché by means of a gelatine roller. The first pull or two are generally poor and are somewhat spoiled by the dampness of the cliché, but the subsequent impressions are excellent. In order to print in the copying press, I lay the inked cliché on a piece of india-rubber cloth, covering the image with a mask of paraffin paper, and then the paper on which I wish to print, and over this a thin bag of fine cloth filled with wadding. It is the use of this blanket which makes it possible to press the paper into contact, and to obtain all the fineness and detail of the cliché.

"If after about twenty pulls the details of the high lights begin to show gray, one only need damp the cliché with a pad dipped in the damping bath in order to make it as good as ever."

Improvements in Color Photography.—Mr. Frederic E. Ives, of Philadelphia, has made an improved camera for taking three pictures at the same

time on one long film or plate, instead of with three separate plates and instruments. Each section of the plate is coated with a special emulsion containing a dye sensitive to one of the complimentary colors of red, blue, or yellow. In the camera are fixed three reflecting prisms, so arranged that from one lens the three different duplicate images are projected upon the plate, less than half an inch apart. When developed, a negative of three pictures is obtained. Lantern slide positives may be printed from this and when put in a lantern having a specially constructed front for supporting the three prisms, one in front of each picture, in place of the usual objective, all lighted equally by one large condenser and luminant, there being behind each prism a red, blue, and yellow gelatine film, the three pictures converge on the screen to a common focus, coincide, and produce a beautifully colored picture. The attachment is quickly made and though the picture on the screen is a trifle smaller than usual, it is very brilliant. Mr. Ives exhibited his apparatus before the Franklin Institute; the improvements shown were greatly appreciated.

The Bausch & Lomb Lens Contest.—We are advised that the lens contest inaugurated by the Bausch & Lomb Optical Company has met with an enthusiastic reception, forty of the leading camera clubs having accepted the conditions. Apart from the opportunity thus afforded of becoming familiar with American lenses and shutters, the contest cannot but prove valuable in the knowledge the participants will gain regarding the conditions which govern successful work with shutters, conditions which are too little known and observed.

Yellowing of Negatives Developed with Hydroquinone.—Despite the oft repeated assertion that hydroquinone will not stain the film, instances of yellowing when this developing agent is used are by no means uncommon. Until quite recently we have been unable to find any certain remedy for the trouble, but in a recent issue of *Progres Photographique* we found an explanation and a remedy. The statement is made that the discoloration occurs only in the fixing bath, and only when the film is in an alkaline condition. This statement, which we have substantiated by numerous experiments, suggests the remedy, the use of an acid treatment after development and before fixing. A weak solution of tartaric acid, about one hundred and fifty grains to one quart of water, has been found to work the best in practice. After development the plate is washed as usual and then immersed in the acid bath for a minute before fixing. So far as we have been able to test the remedy it has proved efficacious.

Mr. T. C. Hepworth, formerly editor of the *Camera*, and more recently of the *British Amateur Photographer*, has become proprietor and editor of the *Photographic News*. Under Mr. Hepworth's able administration, the *News* is sure to hold its place in the front rank of photographic journals.

Mr. Brook on Development.—At the conclusion of a sensible article on Home Portraiture in the *Photographic Record*, Mr. T. Morley Brook has this to say anent the development of portrait negatives: "Mix the developer with a little essence of common sense, according to the subject and the effect in view.

"Very seldom should two consecutive plates be developed alike. Take, for instance, a fair sitter with a light dress. Here we require as much contrast as possible, and obtain it by the arrangement of the light, and by developing with plenty of pyro, and the addition of a little bromide in the solution. The alkali is introduced a grain, 10 minims of a 10 per cent. solution, at a time, and the plate is developed very slowly. As a reverse to this, take the case of a brunette with deep-set eyes and a light dress; here we are sure of contrast, do what we will; so we get well away from the light, give full exposure, and develop with half a grain of pyro to the ounce, no bromide, and develop rather quickly."

Iodide of Mercury Intensifier.—The following three solutions are made up:

A.—Bichloride of Mercury,	1 part.
Water,	24 parts.
B.—Iodide of Potassium,	1 part.
Water,	24 parts.
C.—Saturated solution of hyposulphite of soda.	

To make the intensifier, a sufficient quantity of A is placed in a graduate, and enough of B is added, in small quantities, an excess of precipitate of red iodide of mercury, which is then re-dissolved by the addition of a few drops of C. The bath is ready for immediate use, and it is allowed to act on the well-washed film until the desired degree of intensification is gained. Only a slight washing is necessary after intensifying. Care must be taken not to touch the surface of the film with the fingers.

In consequence of pressure of more important matter on our space this month, we are compelled to make the Editorial Comment briefer than usual, but we feel confident that sufficient valuable matter will be found in the other departments to atone for the briefness of these notes.



SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Society of Amateur Photographers of New York, Tuesday Evening, June 9th, Regular Meeting.—It was unexpected that two meetings of the society should occur at the same time in two different places, as happened on this evening, occasioned by the extension of the photographic exhibition at the Fifth Avenue Art Galleries for one week longer than expected. Going on at the same time was an exhibition of slides at the galleries, 366 Fifth Avenue, presided over by Prof. Geo. R. Cromwell. At the rooms, 113 West 38th Street, President James H. Stebbins presided. After the reading of the minutes of the previous meeting, the secretary explained the apparatus that was presented. One was a portable bromide enlarging cabinet, invented and patented by Mr. Charles Quartley, of Baltimore, Md., which resembled, when set up, a huge square wooden inverted funnel. The base could rest on a low table or on the floor, and the top, holding the lens and negative, was intended to point directly upward to the sky. It was a daylight contrivance. It is made in sections and is built up the same as children build towers with blocks, the joints being closed light tight like ordinary kits. The upper part holds the lens, and a simple arrangement for focusing is provided. The base is made large enough to hold an ordinary 18 x 22 sheet, and is provided with a slide for protecting the paper from the light and means, when ready for exposure, of elevating the sensitive sheet to the exact focal plane. Doors are provided in one side for examining the image when focusing. It appeared to be a very handy contrivance, and could be packed away in small compass.

A model of the improved Hetherington Magazine Camera was shown and attracted considerable attention; it possessed several novel features and had the merit of being simple, compact, and well made. Another hand camera shown was the "Premier," which used plate holders. It, too, was an attractive looking instrument, and had simple working parts.

Mr. Wm. M. Murray informally explained, at length, the principles of lenses, the functions of diaphragms, the method of determining the equivalent focus of a lens as expressed in terms of f , the angle of view, the capacity of a lens to cover a given field, and the application of lenses to hand cameras, including the points to be observed in focusing. He did not claim to say anything new, but desired to put the matters in as simple and explainable shape as possible so that all could understand. Rev. Clarence E. Woodman had exhaustively treated the subject of lenses for hand cameras, and from his writings much practical information could be obtained. A complete understanding of the principles of lenses and their functions would materially aid the amateur in using intelligently his hand camera. He illustrated his remarks by several diagrams on the blackboard, and at the end of his talk was applauded and thanked.

Mr. Harry Fowler, Secretary of the Brooklyn Academy of Photography, exhibited a transparency plate made from one of the negatives of the spectrum, in colors, taken by Professor Lippman in Paris.

Miss C. W. Barnes spoke of the circular sent out to the clubs in reference to the prize lens and shutter contest proposed by the Bausch & Lomb Optical Company, and moved that a committee of three be appointed to take charge of the matter. The secretary opposed the motion on the ground that he did not see what good it would do the society to further any such advertising scheme. Others did not see the question in the same light, remarking that the society would come into possession ultimately of a valuable lens and shutter. The motion was amended, referring the matter to the board of directors, with power to appoint a committee. Before the meeting adjourned the secretary reported, as a delegate from the society, on the success of the first meeting of the American Photographic Conference, and of its cordial appreciation of the kindness of the society in allowing the conference to use the

rooms without expense. No further meetings were held during the month, and none are contemplated till the September 9th meeting.

During the photographic exhibition at 366 Fifth Avenue, which was extended for an extra week, ending on Saturday evening, June 13th, ten lantern slide exhibitions were given embracing a different set of pictures each evening. Among the sets shown were slides by the Photographic Society of Philadelphia, the Newark Camera Club, the Pittsburg Amateur Photographers' Society, the two sets of "Photography" English slides, a large number of miscellaneous slides contributed by exhibitors, and two evenings Prof. D. L. Elmendorf entertained the audiences with his Rhine and Alpine views, so that altogether a great variety was supplied. There never before was such a large display of amateur lantern slides as at this exhibition.

Personal Notes.—Mr. Ernest Warrin returned home, on June 10th, from a short trip to England and Paris, securing a number of street views with his hand camera, the kind of photography with which he is particularly successful.

Dr. John T. Nagle had the only collection of Texas views in the photographic exhibition. He contemplates presenting the frame to his Texas friends as a souvenir of the visit. Very few of the Texas people realize what a 4 x 5 hand camera can do.

Miss Elizabeth A. Slade is spending the summer on the continent, using her 4 x 5 camera with films. She sailed on June 6th, and returns in October. She was a large contributor of lantern slides at the exhibition, and sent an enlargement of her "Midnight Sun" picture, by the Artotype process, that was more clear than the original, though a close inspection made apparent the magnification of the grain.

Miss Catherine W. Barnes was also a large contributor of slides to the exhibition, and succeeded in securing a medal which was deserved. She sent a number of pictures to the Vienna exhibition, but like most other American contributors none of hers were accepted to be hung, which will doubtless be a disappointment. She is now engaged in illustrating the poem "Elaine," on 11 x 14 plates, for competition at the Buffalo Convention, held this month, and goes to the extent of having special backgrounds prepared for each picture. Few women are her equal in perseverance and energy in such lines.

Mr. Edward Leaming contributed excellent medical technical slides to the exhibition. He makes a specialty of printing on plain paper, and does some good work. He finds in photography valuable assistance in his medical studies, and considers the art under-estimated in its application to the different branches of science. As applied to medical science its use is being rapidly extended.

Mr. R. H. Lawrence, though not seen much at the rooms of the society, still retains his interest in hand camera work and lantern slides. At his home he has every convenience provided for photographic work, and has a large collection of slides, illustrating several of his foreign tours. He has his own lantern, and frequently entertains his friends with the results of his work. He prefers the platinotype print to any other kind.

As shown in the late exhibitions, Mr. Alfred Steiglitz perhaps knows more about successful platinotype printing than many members of the society. He has spent much time in practicing it and does excellent work. Figures and landscapes particularly interest him.

Mr. James H. Stebbins's inclinations run towards small negatives, nothing larger than 4 x 5, and to the making of lantern slides. When on his last trip to the continent, after he had made a number of exposures, developed the films, and discovered most of the negatives were slightly out of focus, he ascertained by measurement that his plate did not register correctly with the focus, he of course felt discouraged. It only leads to the conclusion that actual experiment beforehand is the only true way. Mr. Stebbins is making a specialty of new printing processes, flash lights, and developers.

Mr. H. M. Grisdale is a firm believer in landscape photography, where plenty of time can be given to the consideration of the view. His specialty has been the scenery on the Bronx and in Pennsylvania. He has many excellent negatives, but finds little time to make prints from them. He is a careful, conscientious worker, and still pins his faith in Cramer plates and the pyro developer. He is thoroughly conversant with the old wet plate process, and is interested in giving reliable information to new members.

Mr. H. N. Tieman, formerly a member of the board of directors, has resigned to go into the photographic selling business, under the style of Tieman & Bartlett, in West 42d Street. For a year or more he took charge of the Society Plate Supply, doing the work very creditably. This branch has been given up by the society, but such supplies as are wanted are now drawn from his firm.

Mr. A. L. Simpson has been turning his attention to flash-light pictures on a large scale, that is, setting off several flashes at once in a large hall or room to secure even illumination, and has been very successful. He is also an adept with hand cameras, and on street views and marine work. His American flag picture on the stern of the United States Cruiser, Boston, is remarkably good. He is an industrious worker and turns out large numbers of negatives.

Mr. J. Wells Champney, now located in his new and spacious studio in the old Manhattan Club Building, corner of 15th Street and Fifth Avenue, finds photography valuable aid in giving him details of the costumes of his sitters. He really has a large north side light which answers admirably for photography. He develops his exposures at the rooms of the society and employs an 8 x 10 camera.

Mr. Charles Simpson, a former member of the society, is spending the summer in Norway, where he expects to secure, with his hand camera, some excellent views. He has been abroad a year, and contemplates a trip up the Nile next winter. He finds German plates very close in quality to those made in the United States, though the size is slightly different. He was obliged to have special holders made to use the plates. This would suggest a good topic for the International Congress, the securing of uniform sizes in plates.

Photographic Section of the American Institute, Tuesday, June 2d.—At the regular meeting of the section, with Mr. Henry J. Newton in the chair, an interesting comparison of wet plate and albumen process lantern slides with those made on dry plates, were undertaken. The slides shown were contributed by A. D. Fisk, Dr. L. H. Landy, Mr. C. Van Brunt, Mr. T. C. Roche, and Mr. Newton. The wet plate slides were rather white and black, or too snowy. However, all the slides were interesting, and a pleasant evening was spent. The annual excursion is to take place on September 10th, up the Hudson River, at some point near West Point, or Newburgh. The next meeting will be held September 8th.

[Lowell, Mass., Morning Mail, June 28, 1891.]

Artistic Photography.

MR. GEORGE A. NELSON'S SUCCESS IN THE VIENNA EXHIBITION.

Some weeks ago it was announced that an artistic photograph by Mr. George A. Nelson of this city had been accepted at the International Exhibition of Photography at Vienna, held under the auspices of the Club of Amateur Photographers of that city, of which the archduchess Maria Theresa was patronness. Little conception could be had by such bare statement of what worth the picture by Mr. Nelson possessed. A more complete account of the exhibition is therefore necessary to do full justice to the artist.

In response to the invitation extended by the club, over four hundred artists from all parts of the world made application for exhibition. Each applicant sent many pictures. To insure a collection of only meritorious works, a jury composed of some of the most eminent artists in Europe, ten in number with a referee, examined the photographs previous to admission. The chief principle by which the jury was guided was the condition that artistic conception should predominate in the picture. The technical perfection of a photograph was not to be taken as its chief merit, but only as a secondary consideration. For this reason a considerable number of photographs which would have met with the fullest appreciation at another exhibition, could not be accepted. On the other hand pictures which seemed as though they were reproductions of perfect paintings, or as though caught direct from nature in a perfectly artistic manner, were accepted despite any slight technical imperfections. Just so the jury prized those photographs which as studies might be serviceable to artists. Whereas from among nearly three hundred pictures sent in by one single

person only one could be accepted, in the case of others nearly all presented were received. Some single pictures were also rejected for the benefit of the exhibition and the exhibitors as well. In addition to artistic value the jury also considered mechanical merits, such as the method of printing, etc.

It will be seen already that it was no easy matter to gain admission for any work, but this is not all. The competition between the artists was severe. Such artists as George Davidson, of London, who succeeded in gaining admission for eighteen studies, H. P. Robinson of Tunbridge Wells who was favored with fourteen exhibits, Otto Schmidt, Vienna, Grafn Loredan da Porto-Bouin, Vincenzs, Moritz Nahr, Vienna, and a few others, each with a dozen or so exhibits, raised the standard very high. Consequently the average number admitted was not more than three or four to an exhibitor, and the majority had only one. Mr. Nelson sent four pictures and one, "Der Dorfschuster" (as it is catalogued) was accepted. A letter to him from Carl Srna, the president of the club, informs him that he is one of the six hundred chosen from four thousand and congratulates him on his success. A subsequent letter asks for copies for several European academies and institutions of fine arts, and royal personages.

Considering the competition and criticism, Mr. Nelson is certainly to be congratulated upon his success and should feel proud of it. He was, it may be added, one of ten successful exhibitors from the United States.

BOOKS AND EXCHANGES.

THE INTERNATIONAL ANNUAL, 1891-92. Vol. IV.

The fourth volume of the "Anthony's Annual, issued in June, is fully equal to the previous annuals in variety of contents, and superior in quantity and quality of illustrations. It contains seventeen full-page illustrations, of which two are photogravures, the rest being excellent examples of the half-tone process. The frontispiece is a beautiful reproduction in photogravure of an "Arab Village on the Nile," from a negative by Mr. Horace W. Gridley. Among the most noteworthy half-tone illustrations are the "Cinderella" picture, by Miss Catherine Weed Barnes, and reproductions from Mr. D. L. Elmendorf's Swiss and Holland negatives. The carbon process and its applications are fully treated upon, and other printing processes are explained. There are useful articles on home-made apparatus, on home portraiture, on improved developers, and methods of intensification. The volume is edited by W. Jerome Harrison, F.G.S., A. H. Elliott, Ph.D., F.C.S., and W. I. Scandlin, and is published by E. & H. T. Anthony & Co., 591 Broadway, New York. Price 50 cents in paper covers. New yearly subscribers to the AMERICAN AMATEUR PHOTOGRAPHER, for a period of three months, will receive a copy of the "Annual" free when requested.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our reader, to whom timely notice of novelties may be valuable.]

THE HETHERINGTON MAGAZINE HAND CAMERA.—It is especially gratifying to the makers of a new piece of photographic apparatus like the above camera, to know that their instrument succeeded in taking the only medal awarded for photographic apparatus at the late Fourth Annual Joint Exhibition in New York. The camera was pronounced by the hundreds who examined it, as being especially simple, ingenious and quickly worked. It

was the first that had been sent out from the recently-established factory and was therefore entirely new. It is a very neat looking instrument and is nicely made; is very accessible for the putting in and taking out of plates in the dark-room, all the working parts are positive, so that nothing is left to chance. The continuous self-setting shutter is also an excellent feature. It is sure to become a popular hand camera, and being invented by a man who appreciates the wants of amateurs and who is determined to constantly add improvements, it is certain to be a very practical machine. We believe it is the first hand camera that has won a medal in this country. It is made for 4x5 plates or films, but we learn other sizes are to be made later. We have seen some excellent work made with it.

The Photographic Lens and Shutter Contest.—In our April number we spoke of a contest proposed by the Bausch & Lomb Optical Company, of Rochester, N. Y., giving an outline of the conditions. Since then a circular describing the propositions in detail has been sent out, and in addition seventy letters were addressed to the representative societies in the country to which thirty-two responses favorable towards the project were received. From fifteen to sixteen societies were only represented on paper having passed out of existence, while four or five did not have sufficient membership. Several communications have been received from individuals not connected with any association, desiring also to participate. To all the associations entering into the contest, lenses and shutters have been promptly forwarded, and when received, we are told, elicit many favorable comments.

Concerning the conditions, several pertinent questions have been asked, as, for example: First, what do we consider to come under the head of instantaneous? The proposed reply is life motion shown on the negative. Second, what shall the instantaneous quality be judged by? Third, what shall constitute an amateur? Fourth, can a person use his own Bausch & Lomb lens with which to make competing negatives? The reply to this is in the negative. Fifth, what speed is considered instantaneous? The reply is, any speed. Sixth, upon what basis are the judges to make awards—composition, technique, or the best general all round work? The reply is on the best technical work. Do judges have to be active members? It is advisable not to have any of the members of the judging committee take part in the contest.

The gentlemen appointed to serve as judges on the general result are F. C. Beach, Dr. G. Hunter Bartlett, H. N. Sweet, of Boston, Mass., Dr. John Nicol, of Chicago, and Randall Spaulding, of Mont Clair, N. J. All of the principal clubs in the country will enter the contest, which closes early in October.

ENLARGEMENT OF THE GUNDLACH OPTICAL WORKS.—The Gundlach Optical Company, of Rochester, N. Y., has just moved into a fine new building at 171 and 173 Pinnacle Avenue. The company erected this factory during the spring months, and it is now entirely fitted up for their use. We are told that no pains have been spared to have the arrangements as complete as possible, and all the appointments and facilities are as complete as can be obtained. It is probable that no factory in this country or Europe is in better condition for the manufacture of high-grade optical instruments than this. The recent improvements in the photographic lenses which Mr. Gundlach has made has caused the lenses of this establishment to be greatly appreciated by many photographers, and it is with pleasure that we note this evidence of their prosperity. In the August number we hope to give an interesting article by Mr. Gundlach on the peculiarities of lenses and the glass composing them.

United States Photographic Patents

Issued in May and June, 1891.

May 5th.

451,853—Magnesium Flash-Light; Otto Doehn, Cleveland, Ohio.

451,880—Photographic Shutter; C. C. Packard, Kalamazoo, Mich.

May 12th.

452,059—Calender for photographic purposes; A. Leutner, Vienna, Austria, Hungary.

452,119—Photographic Camera; B. J. Edwards, London, England.

May 19th.

452,766—Support for Photographic Printing Frames; A. J. Dawdy, Goshen, Indiana.

May 26th.

452,859—Photographic Stand; H. Vité, Berlin, Germany.

452,928—Photographic Camera; M. Vega, New York.

452,937—Rotary Index and Photographic Album; B. Staunton, Douglas, Wyoming.

452,966—Producing Instantaneous Photographs; W. Donisthorpe and W. C. Crafts, Westminster, England.

June 2d.

453,813—Photographic Background; C. Fredericks, Brooklyn, N. Y.

June 9th.

454,005—Screen for Magic Lanterns and Photographers' Use; E. H. Parsons and E. U. Frazer, Kane, Pa.

June 16th.

454,268—Machine for Printing from Callotype or Photo-Gelatine Plates; W. C. Hawkins Taunton, Mass.

454,433—Adjustable Photographic Printing Frame; H. B. Hennemann, St. Louis, Mo.

20,840—*Design Patent.* Photograph Mount; G. F. E. Pearsall, Brooklyn, N. Y.

June 23d.

454,518—Developing-Dish for Photographers; A. Doyle, New York, N. Y.

June 30th.

454,844—Photograph Album; A. W. Brewerton and M. R. Szameit, Chicago, Ill.





BY CATHERINE WEED BARNES.

THE SONG OF LOVE AND DEATH.

"Lancelot and Elaine."

THE AMERICAN
AMATEUR PHOTOGRAPHER.

A Monthly Review of Air Force Geography

VOL. III.

BOSTON, MASS., AUGUST, 1891.

No. 5

Our Illustration.

THE illustration in our present number is the first of a series of three pictures entered for the gold prize offered at the Buffalo Convention of the Photographic Association of America. There were four competitors, three professional and one amateur. Miss Helen Wood Barnes, who made the negative for this picture, is just married. Mrs. Barnes competed last year for the same prize at the Washington Convention. A few amateurs realize the labor and the expense requisite for this work, which, however, richly repays all the sacrifice it gives to him who is so intended to be illustrated are as follows:

So in her tower alone the
His very shield was gone,
Her own poor work, her emp
But still she heard him, still
And grew between her and the

And in those days she made a song
And called her song "The Song of the Sea"
And sang it: sweetly could she sing
And sang it: sweetly could she sing

" Sweet is true love tho' 'tis but a pain,
And sweet is death when 'tis for love's sake;
I know not which is so, but both are vain."

"I fain would follow thee, my lord, to France;
I needs must follow thee, my lord, to France;
Call and I follow, I will follow thee."

The New York M... ..

By F. C. [illegible]

THIRD N

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA
LANCORS AND FOREIGN EXHIBITS

IN THE work of the Photographic Society of Philadelphia we find more that is characteristic of the latest progress of American photography, and of the best progress in that department. The exhibits were hung in one group by themselves on the south side of the main gallery. Begin-



BY CATHERINE WELLS BARNES.

THE SONG OF LOVE AND DEATH.

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THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

BOSTON, MASS., AUGUST, 1891.

No. 8.

Our Illustration.

THE illustration in our present number is the second in a series of three pictures entered for the grand prize competition at the Buffalo Convention of the Photographers' Association of America. There were four competitors, three professionals and one amateur, Miss Catherine Weed Barnes, who made the negative for the picture just named. Miss Barnes competed last year for the same prize at the Washington Convention. Very few amateurs realize the labor and thought requisite for illustrative work, which, however, richly repays all the study one gives to it. The verses intended to be illustrated are as follows:

So in her tower alone the maiden sat:
His very shield was gone; only the case,
Her own poor work, her empty labor, left.
But still she heard him, still his picture form'd
And grew between her and the pictured wall.

And in those days she made a little song,
And called her song "The Song of Love and Death,"
And sang it: sweetly could she make and sing.

"Sweet is true love tho' given in vain, in vain;
And sweet is death who puts an end to pain;
I know not which is sweeter, no, not I."

"I fain would follow love, if that could be;
I needs must follow death, who calls for me;
Call and I follow, I follow! let me die."

The New York May Exhibition.

BY F. C. BEACH.

THIRD NOTICE.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA—THE BOSTON CAMERA CLUB—MISCELLANEOUS AND FOREIGN EXHIBITS.

IN THE work of the Photographic Society of Philadelphia we find much that is characteristic of the latest phases of American photography and of the best progress in that direction. The exhibits were hung in one group by themselves on the south side of the main gallery. Begin-

ning near the door were several flash-light studies by Mr. Henry H. Supplee ; one entitled "Little Miss Muffet" being particularly soft and pleasing. In the six frames by Mr. Charles H. Miller was "An Old Highway," nicely arranged, of good color, and enhanced by good cloud effects. Mr. W. S. Clow had some interesting composition figure studies. "First Lessons in Art" showed a natural grouping of children about an artist at work, another, "Monday" (wash-day scene), indicated fair composition.

Perhaps the largest exhibitor was Clarence B. Moore, who had several frames covering a variety of subjects. An effectively lighted picture was "Once Again," showing a standing figure reading a letter by candle light. "A Live Newspaper" was a novel picture. Other figures that were attractive were "A Hot Day," and "An August Afternoon," the latter was very nicely posed. A portrait entitled "Flo," which took a diploma at Philadelphia, represented the head of a pretty girl having bushy black flowing hair. The careful work of Mr. Edward T. Bradway was much admired, his flash-light of a night blooming cereus was especially good, while his marine view "On the Delaware," near the navy yard, was not only technically fine, but very artistic in its treatment.

Dr. J. J. Kirkbride contributed a few pictures of fair merit. The brocade enlargements sent by James L. Dillon were superb examples in that line. His "Mountain Road" was beautiful and improved greatly by the excellent way the clouds had been managed.

In Mr. E. B. Harden's exhibit we noticed that entitled "The French Creek, Penn.," as being the most interesting. George B. Wood showed several figure studies ; one, entitled "All Broke Up," of a boy in the act of crying, was well done. But his "Watching Grandma Smoke" was, perhaps, the most artistically grouped. David Pepper, Jr., showed good surf pictures taken at Mount Desert, Maine.

Mr. Robert S. Redfield, who has tried platinotype printing until he has very nearly reached perfection, displayed much artistic work in his collection of seven frames. In addition to "Mending their Ways," which seemed to be a very attractive picture and was illustrated in the catalogue, we noticed "Feeding the Chickens," and "A Morning by the Brook." In this the figure was excellently posed, and the exquisite detail in the surrounding trees and bushes clearly brought out. It should be mentioned that Mr. Redfield was one of the medal winners.

In the six frames sent by Mr. John G. Bullock were two pictures of especial merit, (No. 68) "Among the Berkshire Hills," a beautiful road and tree study, and (71) "A By-Path," showing very fine foliage and detail. All the prints were printed in platinum.

Another successful worker was Mr. C. R. Pancoast, all of whose prints, with one or two exceptions, were by the platinotype process. Among his best pictures were "A Letter from My Boy," representing the elderly mother

standing in front of a pretty vine-covered porch, having her sleeves rolled up as if busy with work, intent on reading the letter. Her pose, lighting, and the background were very cleverly arranged. "Watching for the Speckled Trout" was a wonderfully good brook scene, soft, yet full of detail. "A Bit of Montauk" was a capital marine picture, showing vividly the play of the ocean surf. Another, "Near Waterville, Conn.," was noteworthy for the peculiar effect obtained in bringing out the detail in the snow.

Some very picturesque work was exhibited by Mr. Alfred Clements, who was also a medal winner. His "Roadside Bit, Surry, England," and "There's No Place Like Home," were beautiful and suggestive and very perfect platinotype prints.

Of Dr. Charles L. Mitchell's large collection of Alpine views nothing but praise need be said. All were chosen with an artistic instinct which appears to come natural to him, and technically the work was fully up to a high standard. His brook and wood pictures were remarkably fine specimens, as were also his views of the Matterhorn. Nearly all of the views were made on orthochromatic films. The work, as illustrated in his slides, was more harmonious in the different gradations than in the prints, and for the slides he received a medal.

It is somewhat singular to note that the work of the Philadelphia Society, with one or two exceptions, was put in small frames, while a majority of the Boston exhibits were in large frames. But the work of the Philadelphia Society was very uniform in quality, showing that the members have the true understanding of what should be sent to an exhibition.

In regard to the Boston exhibits, one or two members were very profuse in the quantity of work sent, some of it being of excellent quality. There was not such a general representation of what the club can do as was hoped, owing, it is said, to a lack of interest, and to a dislike on the part of some to the absence of all classification.

Beginning with the portrait of an Italian boy by Mr. John C. Lee, we noticed that entitled "The Young Musician," as being very naturally posed, soft and pleasing, while the black background brought out the whole picture in strong relief. It reminded us of the softness of a daguerreotype image.

Mr. H. C. Dunham had two frames of flower pictures, very attractive, gracefully arranged, in which the absence of hardness was noticeable. In another frame were nine snap-shot views that were very good. In Mr. A. G. Van Nostrand's two frames were nice marine effects, especially "A Foggy Morning" off Marblehead (pretty water effect). In "After the Storm," at Marblehead, the surf was excellent but the clouds showed evidence of being worked up too much by the retouching pencil.

The largest exhibitor from Boston was Mr. H. A. Latimer, whose work we briefly alluded to in the June number. He had one large frame containing twenty-three pictures, and fourteen other frames of enlargements, mostly.

In the single frame we noticed "The Antiquarian of Deerfield (Mass.) in his Favorite Corner," as being a very good portrait study; a remarkably clear and interesting photograph of a "Jam Around the Buoy, Corinthian Yacht Race, Marblehead, Mass.,"; a pretty landscape called "The Mill Road," and a beautiful tree study, entitled "The Birches, Charles River." In his large work, a portrait study, "Mother and Child," was artistically posed and evenly lighted, while the large bromide enlargements of "Tropical View on Indian River, Florida," and "Sunset on Ware River, Nantasket, Mass.," were particularly good. In a frame of 4 x 5 river views, by Mr. W. O. Withereil, one of "Indians Poling Rapids" was especially well done. Mr. George H. Eaton contributed fifteen frames of large portraits taken instantaneously in the studio of the Boston Camera Club, one or two were of girls in the act of dancing, which were good for the subject, but in consequence of shortness of exposure were slightly foggy. All of his exhibit showed conscientious work and a faculty of nicely lighting the subjects.

The architectural views in two large frames, of ruins and temples in Yucatan, by Mr. Henry N. Sweet, were very clear and crisp. Mr. Ralph P. Ahl had one frame of interiors of the Boston Stock Exchange, very soft for white rooms, and a very large enlargement from a $6\frac{1}{2} \times 8\frac{1}{2}$ negative of a bird's-eye view of "Boston Public Garden" which was good. Mr. William Garrison Reed sent two fairly good bromide enlargements of New Hampshire scenery, though one appeared a trifle snowy. Mr. C. E. Hubbard's two enlargements of Western scenery were well selected but somewhat too chalky. Of the three frames sent by Mr. James A. Wells, of mountain scenery, that called "A Jam in the Stream" was much the best.

Referring next to the exhibits of members of other societies and non-members, mostly hung in the Annex Gallery, we are attracted by the artistic work of members of the Lowell Camera Club: Mr. Albert S. Guild, in frame 375, had some very nicely arranged canoe pictures; Mr. George A. Nelson, in frame 380, had two attractive pictures, "The Mowers" and the "Village Cobbler;" both were soft, full of detail, and interesting. He was a successful medal winner. Mr. William P. Atwood sent three frames of outdoor subjects. His studies of "Oak and Pine Trees" were very good.

Mr. C. S. Kingsland sent an assortment of photographs in one frame, most of them were original and striking, but not technically perfect. The "Singing Class" was apparently the most interesting. Mr. William T. Demarest of the Agassiz Association had one frame among his six, of a game of "Halma," taken by flash light, that was especially good. Miss Francis B. Johnston had some excellent interiors of prominent Washington, D. C., residences. Mr. R. Eickemeyer, Jr., of the Yonkers, N. Y. Club, had arranged in one frame in sequence three pictures illustrating a hunting story called "Attraction, Temptation, and Satisfaction," and it was remarkably suggestive and nicely done.

Mr. John Zybach sent some excellent large direct views of Niagara Falls, said to have natural clouds, of which 394, "Centre of Horseshoe Falls," and 397, "Horseshoe Falls from Below," were the most striking.

"The Inhabitants of an Old Street in Whitby" was the title of one of the medal pictures by Mr. John H. Tarbell. His effort towards the illustration of the poem entitled "Song of the Shirt" did not strike us as being particularly well done. It showed too much retouching. Mr. John E. Dumont sent five frames of figure studies. "The Dice Players" were well posed, but a trifle hard. "The Solo" was the best, representing a priestly looking man blowing on a musical instrument similar to a cornet. His "Fabiola," another study which has been illustrated in *Frank Leslie's Weekly* looked as if it was printed a little too dark.

Mr. James L. Breese had twelve frames of portraits printed on platino-type paper, several of which were very attractive. The pictures which the judges preferred, and on which a medal was awarded, were on a full length portrait of a lady and a little girl seated on a sofa. In Mr. Max Hansmann's exhibit we selected 428, "C. & O. Canal, Georgetown, D. C.," and "Trailing Clouds of Glory," as being the most attractive. The cloud picture was particularly beautiful. He always does his work very carefully.

The work of Mrs. James Osborne Wright included considerable variety in figures and landscape. Her flash-light study, called "June" (a female head), was nicely done and had a pleasant face but appeared to be over-retouched. "My Lady Genre" was rather superior to all her other portraits. "The Sun's Last Rays from Out the Western Sky" was a very pretty wood scene, in which the light and shadows were nicely blended.

The six frames by William M. Renwick contained some good flower studies, but 437, "Winter," displayed a soft fine effect of the sun on the snow. Another, 439, "Swamp Grass," was an excellent representation of a simple subject, carefully treated.

In Miss Madeline Smith's exhibit most of her portraits, while nicely posed, were too hard. Her "Orchard View at Newburgh" was very good, having the figure placed just right.

Mr. Herman Bucher, Jr., sent several views around College Point, N. Y., tastefully done, one especially (453) was very pretty and well balanced. His "Panorama of Airolo, Ticino, Switzerland," was a good general view. A full length portrait of a "Swiss Girl" was nicely lighted, soft and gracefully posed. He had other views in Switzerland which were quite pleasing.

The marine or surf views by Mr. Henry R. Taylor, showing splendid surf combined with numerous natural clouds were very interesting. His "Orizaba, Mexico," picture was especially clear and good. In Mr. Hugh A. Smedburg's exhibit was an enlarged locomotive picture which was very

good. His "Willow Lane" was also pleasing, but too snowy and white in the foreground.

Mr. William Phillips Thorp sent four small frames. In one were three pictures (snap shots) of "Memories of East Hampton, R. I.," one of these represented a breakdown of a tandem and carriage, very cleverly caught, and was the best of the series. His other pictures, while nicely arranged, looked as if they were slightly over-printed.

"The Entrance to Cave," in Central Park, was the best of the three pictures sent by Mr. Edward B. Miller. The others were too strong in the high lights. The exhibit of Mr. Edwin H. Lincoln, who took a medal for his fine fruit photographs, has been previously noticed. The pictures were remarkably good, toned to resemble very accurately the actual color of the fruit. In another frame were nine interiors, all excellent, soft, and uniform.

Briefly reviewing the Foreign exhibits, we notice first the frame of figure studies by Mr. and Mrs. W. J. Anckorn, printed in platinum. All were good, but one, called "Ambition," showing an old man working over a toy boat with a boy looking on, was naturally posed and much the most interesting. In the five frames by Mr. Frank M. Sutcliffe were a great variety of picturesque photographs. "The Last Load," in frame 162, was particularly well rendered. Another, "The Garden Gate," showing an old man and a little girl in conversation, was attractive. "The Fast Declining Day" had a very pretty cloud effect. Other figure studies were interesting.

Among Adam Diston's six frames, all figures, (167) "Gloaming," an old woman working over a lamp, and the "Smithy," illustrated in our July number, appeared to be his best. His work was very clear and crisp. The two large direct platinotype photographs by Mr. Harry Tolly were beautiful specimens; (173) "Carting Hay," well balanced in figures and landscape, also his "Bantry Bay" (174) a plain landscape overlooking a bay backed by high hills, over which hung floating clouds. The effect was quite pleasing and natural, and illustrated the care that Mr. Tolly had taken in endeavoring to make a harmonious picture.

Mr. J. Pattison Gibson sent an exhibit that was characteristic of him, and most picturesque. His large 10 x 12 pictures were remarkably good. Among these were "In the Prime of Summer Time," selected for illustration in the catalogue, a composition combining all the elements of an attractive picture, and "Weary," a plain road scene having a figure of a woman in the foreground, seated on a small rock by the roadside, while in the distance above the horizon was a beautiful fleecy cloud effect, as is sometimes seen just after the sun has set. The perspective of the road descending and ascending a long sloping hill combined with the cloud effect produced a most agreeable impression. In his smaller pictures, "The Lover's Path" and "The Ford" were particularly good. He with Mr. Diston won a medal. Hung near his were three frames by Mr. H. P. Robinson; all very large platinotype toned

pictures, and, as usual, contained figures with the landscapes, nicely arranged. A very good set of fishing pictures were "Selecting Flies" and "Stalking a Trout—Sunlight Through Mist," in the latter a very interesting effect was shown. Another, "Moor Hens," an example of double printing, had a wonderfully fine cloud effect. "Forget-me-nots" was attractive and seemed to be favored by the judges. It was a view along the bank of a river, one figure of a girl was in the act of reaching down to pick the coveted flowers, while another standing firmly on the bank higher up held her other hand to prevent her from falling. The arrangement of the figures in the foreground with the landscape accessories was very effective. Another, "Shades of Evening," had a group of sheep in the foreground, enhanced over head by a beautiful sky effect. Mr. Robinson, who also won a medal, is truly a master in the making of picturesque photographs and his exhibit was carefully studied by hundreds of amateurs and others.

Concerning the two frames of Mr. Harry Symond's large yacht pictures taken from a sailing vessel little need be said except they were fully up to his acknowledged ability in that direction, displaying remarkable tact for illustrating the most picturesque positions and the action a stiff breeze has on the sails and water. Mr. Louis Meldon had a frame of five remarkably good small instantaneous pictures of athletic sports. His one of "A Diver" jumping into a foaming sea was particularly effective, sharp, and nicely printed.

Mr. Horatio N. King had seven excellent albumen prints from enlarged negatives of interiors of Windsor Castle, Westminster Abbey, and Buckingham Palace. One that was soft, clear, and sharp, was the "Chapel of St. Edmund, Westminster Abbey," another was "The Coronation Chair" in the same building, and from the "Poet's Corner" was selected the portion that contained a bust of "Longfellow." In two other frames containing direct 10 x 12 pictures we noticed excellent photographs of "Dean Stanley's Monuments," "Monument to Lady Nightingale," very effective interiors of "Cactus House" and Victoria Regia House" in the Royal Gardens at Kew.

Mr. Martin J. Harding had a frame of quite small pictures which were, nevertheless, very artistic and won for him a medal. His "Landudus Bay, North Wales," represented good surf effect and a tone that was very natural. The $3\frac{1}{4} \times 4\frac{1}{4}$ hand camera shots at Conway Bay, North Wales, also contained remarkable good combinations of headland, water, and clouds. Mr. George S. C. Bethune had two frames representing fishing and deer hunting in the Canada rivers that were noticeable for their excellence in representing such scenes. His "Making a Portage," showing half a dozen men tramping through woods covered with snow, carrying the boats on their back, was very soft and realistic. Mr. Thomas Mansell, though a member of the New York Society, had a frame of church ruins and interiors, hung among Foreign exhibits, that displayed very good work. His interior of "Salisbury

Cathedral," and the east end of "Netley Abbey," were excellent in their way.

Mr. Douglas Pym sent large life-sized heads made direct from life, not retouched, which were very good. "Our Kaisa" was the head of a girl with jet black hair. The flesh tint was very soft and pleasing. Mr. C. Court Cole had some exquisite interiors of the "Oxford Cathedrals and Library," printed in platinum, which were perfectly lighted, and beautiful in detail. He also won a medal.

Mr. J. H. Harvey, of Melbourne, Australia, sent four bromide prints of the interior of the Parliament Houses in Melbourne. One of the "Vestibule" was the best, especially since the walls and accessories were all white. Mrs. S. Francis Clarke had three figure studies, of which "Winter Gleanings" (a woman with a pack of sticks on her back, trudging through the snow) was the best. Another, "There is nothing half so sweet in life as love's young dream," by Mr. S. F. Clarke, was also interesting.

David Hedges & Sons sent capital single studies of birds from life, also several animal studies and equestrian pictures. Most of the work was beautifully finished, well lighted, and nicely arranged.

Six interesting views of India life (bromide prints on rough paper) sent by Joseph Elliott, of Jubbulpore, India, were printed too hard. Of the two prints sent by Miss Hardman, of England, "The First Sampler," though printed too hard, showed good ideas in the arrangement of accessories.

No finer examples of large platinotype work were in the exhibition than the four life-sized portraits by Werner & Son, of Dublin. The blacks had a velvety richness hard to surpass. The "Last of the Desmonds," a life-sized portrait, direct and untouched, was especially good, having a softness of tone that was very natural. The six views by Mr. F. P. Cembrano were highly artistic in the treatment of light and shade. All were good, but "Twilight," having inky black shadows and beautiful clouds overhead, was particularly admired. Others much liked were "A River Fog" and "At Low Tide—Evening." The prints were made on some special rough-surfaced paper.

The interior cathedral views of Malta Cathedral, and large figure studies by A. G. Tagliaferro, of Malta, were very attractive. The figure studies were 11x14, and the best was "Good, Very Good," showing a student, stooping over, admiring a painting of an actress. We alluded to Mr. Sawyer's pictures in our June number.

Regarding the exquisite platinotypes by Mr. Richard Keene little need be said except that they all were particularly good. He had a series of beautiful views in Monsal Dale, Derbyshire, particularly pretty view in Cressbrook Dale, and some remarkably good pictures of Old Morton Hall at Cheshire and of Hawarden Castle. All of the prints were very uniform and possessed a rich steel engraving effect that was remarkable.

Mr. A. R. Dresser sent a bromide enlargement from a $\frac{1}{4}$ plate, made with the hand camera, of a storm off the coast at Corbiere, Jersey, which was beautifully done. The peculiar tone of the paper resembled closely the green effect of the water.

The collective exhibit of seventy-five photographs contributed by the Amateur Fotografien Vereinigung, of Amsterdam, Holland, contained a variety of work, some of which was noteworthy. There were several character figure studies, nicely posed and evenly lighted, a number of enlargements and landscapes, illustrative of scenery other than that in Holland. This, too, was well represented. Mr. John E. Austen of Maidstone, England, sent a few of his best pictures and lantern slides, but they were miscarried and never reached the committee.

Lantern slides appear to increase in number and variety with each exhibition. This time three hundred were sent for competition, distributed among nineteen exhibitors, two of which were foreign. Many of the slides were very beautiful and were sufficient in quantity to supply the evening entertainments during the exhibition. When not in use, the slides were stored in frames hung in front of the ground glass transparency box, where they could be seen by day or electric light. A majority of the slides were made by the dry process.

The nine transparencies sent by Mr. C. B. Moore were mostly figure studies and compositions. One or two were quite good, but others seemed somewhat over-printed or developed. They were made on the Carbutt A plate and developed with ferrous oxalate.

Regarding the statistics of the catalogue it will be interesting to note that pyro still leads in developers; 87 exhibitors preferred pyro, 21 eikonogen, 20 hydroquinone, 7 the ferrous oxalate; and in alkalies, 58 preferred carbonate of soda, 24 carbonate of potash, and 21 ammonia.

Eikonogen was not made known until after the Philadelphia Exhibition closed, but hydroquinone was used a year before, showing that the new developing agent has in a very short time caught up in popularity to hydroquinone.

The influence of the exhibition has been such that it will require future exhibitors at succeeding exhibitions to exercise greater judgment and care in the selection of their pictures. We are glad to see that the Boston Camera Club has begun to prepare for the fifth annual exhibition, to be held in 1892.

Dark-Room Lighting.

By JULIUS WILCOX.

AFTER trying several small red lamps, including one candle-lamp, which led me to decide that no candle-lamp should ever bother me again with its feeble light and its guttering, I took a large grocery box, bored holes at top and bottom for ventilation, cut away most of the bottom (*i. e.*,


what was the bottom of the box) covering the opening thus made with a single thickness of yellow paper, placed therein a low kerosene hand-lamp with a five-eighths wick, and I have a lamp that is simply perfect. I use but one thickness of paper, having found that two did not give me light enough. The amount of light is startling to some of my friends who are accustomed to working in the dark, but I find it quite safe, having never harmed a plate with it. True, I use slow plates usually, and I recommend them, on all occasions when I can bring them into the subject, for every use where quick emulsions are not indispensable. In handling the quickest plates, especially after a quick exposure, I use the precaution of turning my lamp lower, or of keeping the dish at a little distance until development is well on; and yet I am not sure that even this is necessary. Of course, unexposed plates are another matter; the safe course, especially with the rapid ones, is to keep as far away as possible from any light whatever, in filling holders. An unexposed plate has a sharp hunger for light; an exposed one is pretty well satisfied.

I would not exchange this simple device, which cost me just the twenty-five cents I paid for the lamp, for any lamp in market, not even Carbutt's elaborate \$6 one. The box, by the way, stands on the tubs in my kitchen, and above it is a large gas-burner which I turn down to the blue when not in use. In making slides by contact, I put the two plates in the frame, holding them up against the yellow light to get them in position; then turn up the gas for the exposure, then turn it down and proceed to develop.

Those who prefer to do their work by a feeble light—and who can do it thus, as I cannot with any certainty and satisfaction—may at least take a hint from me to use yellow rather than red. The effect upon the eyes is much less trying. I found my eyes were beginning to object strongly to the red, but they do not mind the yellow.

A Simple Hand Camera.

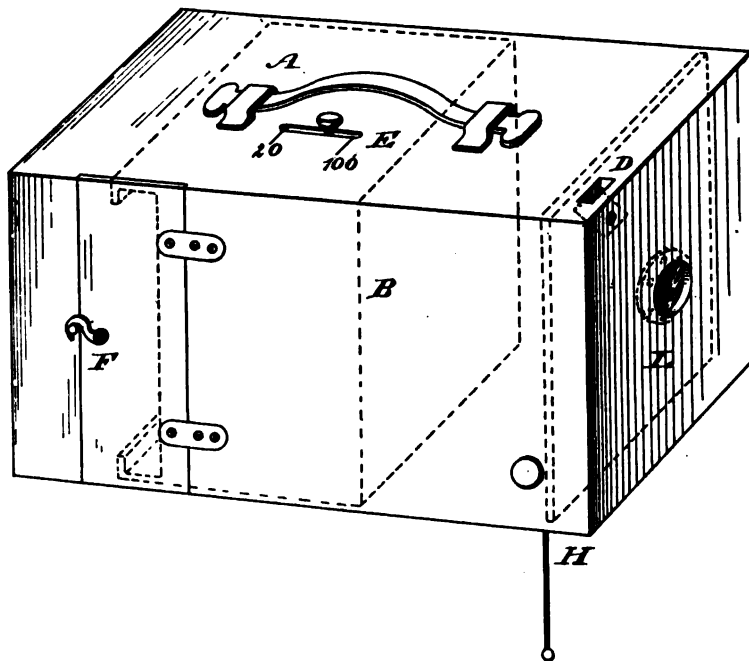
BY M. Y. BEACH.

 **LOW-PRICED** hand camera is an article much desired by the amateur who does not possess one. He may have an ordinary bellows camera with a fine lens, which is capable of doing excellent work; and with it doubtless better work is possible than with an apparatus held in the hand. There are frequent occasions, however, when all of us wish we owned one of those convenient little boxes for picture-taking which does not require a tripod or a focusing cloth. Compactness is what the soul of the amateur yearns for when considering photographic apparatus, and is the end toward which manufacturers are continually striving.

Most of us who have embarked on the fascinating sea of photography already own a bellows camera with a lens of more or less value. Perhaps

there are many such amateurs who would be glad to use their lenses in a hand camera, but who are not inclined to spend from \$15 upwards to secure the second camera. To these I will outline briefly a plan for constructing a hand camera at a very small cost. There is nothing particularly original in the plan, but for the reader who does not know how to begin making a hand camera it will give serviceable ideas.

Fig. 1.



THE CAMERA (COMPLETE).

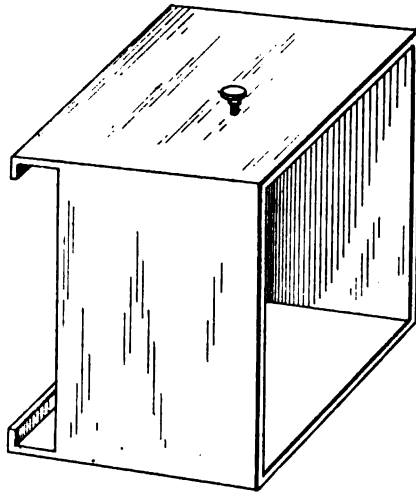
A is the exterior box, dimensions on the outside being $11\frac{1}{2}$ inches long, 6 inches high, and $7\frac{1}{2}$ inches wide. *B*, the inner sliding box. *D*, the finder. *E*, focusing slot. *F*, door for the insertion of plate holders. *H*, cord for setting the shutter. *L*, the lens.

Suppose the equivalent focus of the lens is six inches and that a 4×5 plate is to be used. Secure the outside measurement of the plate holder by which to determine the breadth and depth dimensions of the inner box of the camera. In a case in mind the holder is $6\frac{1}{2} \times 4\frac{3}{4}$. The inner box is open at the front and back, and is constructed of three-eighths stuff, the measurements being scant to permit of easy access to the outer box. The upper and lower sides of the inside box are $3\frac{5}{8}$ inches long, thus leaving space at the rear for making a groove in which the plate-holder should fit snugly in order to be held in position.

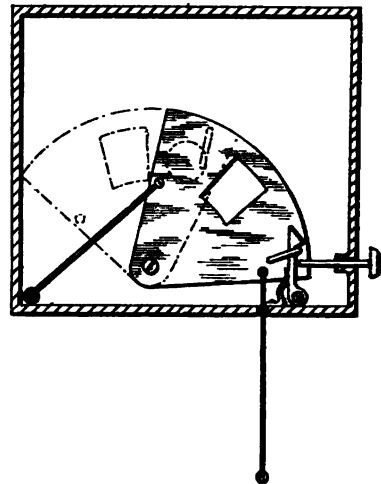
The focusing knob on top is also shown at *E*, Fig. 1. Inside dimensions are $5\frac{1}{4}$ inches wide, $5\frac{1}{4}$ inches high, upper and lower pieces 5 inches long,

sides $3\frac{5}{8}$ inches long. The door (F) gives access to the inner box in which the plate-holder is inserted and should be $2\frac{1}{2}$ inches wide.

The plan for the shutter as given in Fig. 3 is very simple. It is adjusted back of the lens. The shutter is made of sheet rubber. It moves on a pivot from side to side. An eye on one corner of the shutter and a spring hook latch pivoted to the bottom of the inside of the camera box

Fig. 2.

THE INNER SLIDING BOX.

Fig. 3.

THE SHUTTER.

serve to hold the shutter in set position. An India rubber band, extending from the lower left-hand corner of the box to the shutter, acts as the shutter spring. The string, *H*, extending outside of the box is pulled until the eye on the shutter catches in the latch at the bottom of the box. A spindle extends through the side of the box to a button. By pressing the button the shutter is released. The lens may be fitted to a piece of inch stuff and screwed or glued to the front of the box on the inside, as shown at *L*. In the top of the outside camera box (see Fig. 1) should be a slot, *E*, through which a screw knob extends to the inner box to enable the operator to focus the plate. This slot, where the back focus of the lens is 6 inches, should be $3\frac{3}{8}$ inches from the back end of the camera, outside measure, and extend forward $2\frac{1}{2}$ inches. The slot should be protected on each side with a lining of billiard felt, and one end of the inner box at this joint should also thus be protected. A scale can be readily notched on the side of the slot to indicate the focus for several distances. The figures 20 and 100 will be noticed on the top of the camera. An easy rule for determining this scale is to ascertain the focus at ten feet, and then, say, at a hundred feet. The point of focus at twenty feet will be

just half the distance between the focus point at ten feet and that for one hundred feet or over, and for forty feet it is half-way between the twenty and one hundred feet points; for eighty feet it is half-way between the forty and one hundred feet points.

The Finder, *D*, is made of a small lens like a spectacle glass, with a mirror placed at an angle of 45°, and ground glass above, fixed horizontally.

Cherry or black walnut is good wood for a camera. It should be thoroughly seasoned. If cut, planed, and squared and made ready for screwing together at a planing mill, the pieces needed in cherry cost only eighty or ninety cents. A good 4x5 double plate holder costs \$1.25. Screws, hinges, and hooks cost fifteen cents.

THE BUFFALO CONVENTION Of the Photographers' Association of America.

The convention was called to order Tuesday morning, July 14th, by President Hastings, who introduced Mr. McMichael who made the address of welcome.

Following the address Mr. McMichael made the report of the Committee on the Daguerre Memorial, from which it appeared that of the sum of six thousand dollars, the contract price of the monument, only thirty-three hundred dollars had been paid in, leaving a balance due Mr. Hartley of twenty-seven hundred dollars. The discussion of the matter was postponed to a later meeting.

The President then read his annual report, after which the meeting adjourned.

SECOND DAY'S PROCEEDINGS.

At the morning session the chief interest centered about the questions of amending the Constitution and By-Laws, and the worthy representation of photography at the World's Fair.

At the afternoon session the amendments were adopted, and Chicago was chosen as the place of the next meeting in 1891, the convention hereafter meeting bi-annually instead of annually.

The meeting closed with the reading of papers by Miss Catherine Weed Barnes, "Illustration of Poems by Photography"; Mr. John Carbutt, "Orthochromatic Photography," and Mr. G. Hamner Croughton, "Art in Photography."

THIRD DAY'S PROCEEDINGS.

At the morning session Mr. Scandlin read Dr. Elliott's "Report on the Progress of Photography." Following the reading of the report Mr. Gentile exhibited one of Professor Lippman's plates, and gave a description of the method by which it was made. The Daguerre Memorial matter was then taken up and disposed of, after some discussion, authorizing the executive committee to pay Mr. Hartley the balance due him.

At the afternoon session the election of officers was held, resulting as follows: President, W. G. Entekin; First Vice-President, Frank Place; Second Vice-President, C. Stewart; Secretary, Adam Heimberger; Treasurer, Mr. Carlisle.

Mr. Ames then spoke on saving of silver waste, after which the meeting adjourned.

FOURTH DAY.

The most important business of the closing session was the announcement of the awards to the exhibitors of prints, as follows:

Air brush prizes, W. H. Sherman and Mrs. H. D. Sanders; No. 2, Messrs. J. E. and A. J. Rosch, of St. Louis, first prize; H. H. McMichael, second prize, a diploma.

Class A, No. 30, Mr. H. Randall, first prize, Ann Arbor, Mich.; No. 35, G. M. Elton, Palmyra, N. Y., second prize, diploma.

Class B, No. 16, E. F. Hall, Buffalo, N. Y., first prize. (Mr. King here protested against the award made to Mr. Hall, stating that the size of his pictures were not in accordance with the rules, which stated 14 x 17. Mr. Hall explained that the mats might exceed that size slightly, but the pictures were made in accordance with the rules, and he was willing to strip them from the mounts if desired. His pictures were 14 x 17 and not smaller.) No. 20, P. H. Rose, Providence, R. I., second prize; No. 46, H. S. Bellamith, Denver, Col., third prize.

Class C, No. 25, E. C. Dana, New York; No. 45, Gilbert and Bacon, Philadelphia; No. 34, third prize, George Steckel, Los Angeles, Cal.

Class D. There is only one prize, No. 4, J. M. Brainard, Rome, N. Y., Marine.

Class E, landscapes without figures, Miss C. E. Sears, Boston, first prize; A. Heimberger & Son, New Albany, Ind., second prize; No. 17, Mr. H. G. Peabody, Massachusetts. Architectural, No. 32, C. C. Langell, New York.

Class F, No. 47, James Inglis & Co., Chicago, Eastman & Co., Rochester, N. Y.

Class G, No. 21, E. P. King, Providence, R. I.

Class H, No. 22, Miss C. Wining, Providence, R. I.

Class I, No. 27, J. B. Lane, Columbus, O.

Class K, foreign exhibit, first prize, No. 29, W. J. Byrne, Richmond, Surry, England; No. 56, Mueller, Munich, second prize.

The committee have also awarded to Mr. H. P. Robinson a diploma for his collection of pictures, for which there was no award. In the foreign class we only have portrait photography, and these were landscapes with figures.

Mr. Clark,—It seems to me that among the exhibits here there is none more worthy of our recognition than that made by Mr. Inglis, and I would move that the association award him a special diploma in recognition of his beautiful enlargements made in sepia.

The motion was seconded and carried.

For improvements made in photographic machinery since the last convention, the committee have awarded the prize to the Automatic Rapid Printing Machine Company.

The following special prize awards were announced: Six Cramer prizes of \$100 each: For portrait work, Dana, New York; Rose, Providence; Stein, Milwaukee. For landscapes, Jackson, Denver, Col. For instantaneous work, Hemment, Brooklyn, N. Y. For work on instantaneous plates, Elton, Palmyra, N. Y.

The E. & H. T. Anthony prizes for the best work on N. P. A. paper in portrait and landscape work: For portraits, George O'Connor, head printer for Dana. For landscapes, W. J. Harrison, head printer for Hargrave & Gabsman.

The President,—Before we adjourn, I want to thank all who have assisted me in trying to make this convention a success, especially the members of the executive committee, who have done all they could in assisting me. The press have treated us in fine style. We have no fault to find with the reception which we have received here, and to you all who have been so lenient with myself while presiding here, I thank you, too.

On motion of Mr. Clark a hearty vote of thanks was tendered the retiring officers for their energy and ability displayed in the management of the convention.

On motion of Mr. Inglis, a vote of thanks was given the executive committee for their able work in behalf of the association.

Mr. McMichael presented the following report of subscriptions received and promised since the last session in aid of the Daguerre memorial fund: Mullet Brothers, \$10 (will be sent); S. H. Morse, \$1; E. T. Billings, \$5; L. E. Stearns, \$1; W. H. Kibbe, \$1; Cash, \$1; Ph. Bonse, \$10; George Sperry, \$5 (will be sent); W. J. Lee, \$1; Simpkinson & Miller, \$10 (will be sent); W. H. H. Slater, \$1; Acme Burnisher Company, \$1; F. E. Hastings, A. M. Collins, \$10; Automatic Photo Rapid Print Company, \$10; New Eagle Dry Plate Work, \$25; Sweet, Wallach & Company, \$10; C. O. Endeanen, \$3; J. C. Hemment, \$1; J. Small, \$1; W. W. Black, \$1; E. D. King, \$1 (to be sent); Jno. P. Vail, \$2; G. S. Beardsley, \$1; C. W. Motes, \$10; T. G. Littlejohn, \$5; George Gardiner, \$1; J. G. Ramsay, Toronto, \$1; G. C. Gennert, \$1; A. A. Stacy, \$1; L. M. Prince & Brothers, \$1; Peerless Burnisher, \$1; American Cerato Paper Company, \$25; George Murphy, \$10; Bradfish & Hopkins, \$5; F. Pickerell, \$2.

On motion, the convention adjourned *sine die*.

ADDRESS OF WELCOME.

By H. McMICHAEL.

Mr. President, Ladies and Gentlemen—Fellow-Members of the P. A. A.:

In honoring the city of Buffalo, and especially the patrons of photography of this vicinity, by accepting an invitation to hold your convention for 1891 here, you express a trust that a hearty welcome will be given you. It has now become my duty as one of the resident members here, to say a word in accord with that confidence implied in your acceptance and to impress it that we—that all friends of your association in this city, where certainly there is no reason why you should have opponents, have the liveliest feelings of gratitude that you have come among us, and we tender you our sincerest thanks for your presence, and felicitate ourselves in the belief that whatever may be the transactions of this meeting, in its results the greatest benediction will be ours.

We welcome you here, then, not only because your presence is eminently genial, and association with you is most happy, but also because we hope to be benefited by your counsel, your examples, and your instruction, both theoretical and practical.

We greet you as exemplars and improvers of one of the greatest, because one of the most beneficent of arts, and as such it is a great happiness to have you unite with us in the present year's convention. We need and welcome the inspiration to further advancement in our profession, your presence at this time may be trusted to give us. Certainly, as photographers we have great reason to take pride in our guild. In no other calling is there to be found greater inducement to make advancements. Whatever excellence we may be able to attain to-day is only a reason and encouragement to make greater improvements to-morrow. Our art is not an attempt to re-produce nature, but to exemplify all that nature suggests, and teaches as possible to human effort. Nature needs no helpmate, but does welcome co-operation in enlisting man's admiration and man's enjoyment of existing things.

And so anything which helps to keep alive the features of departed friends helps also to continue to revive the best influences of their lives, and must, consequently, be beneficent in its effects.

The work of the photographer makes this beneficence universal, for in all homes, from the most luxurious to the most humble, it may be availed of at will. Though this is only one of its values, it alone is a reason why everything that may contribute to the improvement and perfection of our work should be sought. And, if in other callings the workers find help by association for their mutual improvement, certainly our patrons and the public have a right to claim and expect that photographers should seek to learn by association with each other the best methods and the surest means to the best results in the pictures we produce for their approval.

All this is implied and emphasized in our organization, and so this convention is intended especially for business, and business always means short speeches and prompt action; heeding which fact I close, simply but earnestly welcoming you all to Buffalo and our homes and hearts, and with the heartiest wishes that your meeting here may give occasion evermore for pleasant memories.

PRESIDENT'S ANNUAL REPORT.

By PRESIDENT GEORGE H. HASTINGS.

To the Officers and Members of the A. P. of A.:

For this, the twelfth convention, we meet in annual session, to review the past, and plan for the future. There is not much to be said except in repetition. The financial condition, January 1, 1891, shows a balance of \$2,328.22 in the treasury. The amounts received up to this morning for this convention are as flattering as have been shown in the past and gives us reason to be assured that this year will be a financial success. The benefits to be derived from membership are seen every year by associating, observing, and putting together the facts gleaned at the annual conventions. Practical talks are much better for us than study of theory. To increase our membership is the one grand *desideratum*, and this cannot be done in an hour, but it can be attempted, and one way I shall suggest will be to stop the petty jealousies and inconsistent criticisms, and talk sense instead of continually finding fault without suggesting proper remedies. It is not claimed that this association is run on principles which cannot be improved upon, but with experience difficulties will be overcome. Remedies suggest themselves, and everything will become easier and to a more practical condition. Let every one try to interest his or her neighbor to come into the association, showing the benefits to be derived therefrom, and it cannot be disputed that it will tend to multiply our ranks.

By a system of circulars, mailed so as to reach a great majority of photographers this year, we feel that a great deal of enthusiasm has been aroused, and that the results of the effort and expense of the same have contributed in a marked degree in making this convention one of large attendance and success.

The art principles we are trying to inculcate into our association by the awarding of special prizes, which will draw forth latent talent, embracing the ideal, poetic, and the art of composition, will be seen by continued competitions, and I think the public will appreciate and acknowledge it in an approving manner. Do not give up the idea that we are not able to conceive and execute in a manner which will give us a standing approaching a *Mossonier*, or any that might be named. We surely do not want to be simply machines, controlled by our patrons' whims, but to rise higher and higher and be accorded the praise and credit belonging to us. Many are in the

work without any love for the art aside from getting a living, and too often those who are trying to reach the high standard desired are baffled thereby by lack of patronage, because the scum of the profession are working at an inconsistent remuneration. Merit will demand recognition, even though it may come slowly. Therefore persevere, and the goal will be reached. Retrenchment has been called for in the expenses of this association, but in a three years' service on the executive committee I fail to see any way in which any great saving can be accomplished. If you appropriate a less sum than one thousand dollars for awards and badges you will be unable to offer the special inducements which attract the attention of the workers and make our art department less attractive and instructive than at present. The hall expense, which is quite an item, varies from year to year, and usually the committee are quite at the landlord's mercy, as it is seldom that more than one hall appropriate for holding the convention can be found in any city. The idea of merging the offices of Secretary and Treasurer into one can be done, but that would necessitate the creating of a new office—that of third vice-president—who could act as secretary during the business sessions of the convention, and yet our honored treasurer's book shows that for the past six years he has received only an average of \$288.61 per year, so that would not improve our condition to any great degree. A saving of about \$400 has been effected this year over our convention held in Boston on hall accommodations. A permanent home recommended by my predecessor in office is an idea well worthy your consideration, believing that even if the building is not owned by the association it can be leased and sub-let so that a revenue would be received. It would be the store-house for our donations, art works, records, etc., etc. It would be less expensive for our stock dealers, as their spaces could be kept without the necessary expenses for refittings each year as now. A proper light for the art department could be put in, so that all exhibitors would be placed on an equal footing, regarding the lighting of their pictures, a studio properly arranged for practical working and also could be used as an audience room, would, with a few other necessary arrangements, make a very complete home for this association. Our committee on this subject have reported.

I trust the project will not be abandoned. Believing the records of this association too valuable to be at the mercy of the flames, I directed the secretary to deposit them in the Garfield Safe Deposit Vaults in New York, at an expense of \$3 a year, which is less than the amount paid for expressage year by year, from secretary to secretary and convention meetings. Our association should be well represented at the World's Fair, and the committee in charge of arrangements ought not to leave a stone unturned to make it the grandest show of photography ever seen.

In our profession we are unjustly taxed for fire insurance, in that the rates established when (we will allow) the risk was more hazardous, has

not been decreased in proper proportion, and I think this association ought to raise its voice against such exorbitant rates and act in accordance with such resolutions as may be passed, with the proper authorities.

In conclusion, I wish to say that the exalted honor I have received by your suffrage, the courtesy and assistance rendered to me by the officers and members of the association, will ever be remembered with feelings of pride and pleasure, and I hope that my efforts to make this convention a success will be acceptable to the Photographers' Association of America.

ILLUSTRATION OF POEMS BY PHOTOGRAPHY.

By MISS CATHERINE WEED BARNES.

Delegates to political conventions are often said to be "instructed," and so I conceive myself to have been in receiving a notification that my paper for this convention need not be long, and should be instructive. I shall endeavor to carry out these instructions.

Let me put myself on record, to begin with, as decidedly and understandingly taking ground that the words "art" and "artistic" are no longer the private property of painters and sculptors. After several years' training in painters' studios, I have largely laid aside the brush for the lens, and in so doing it appeared to me as if I was only stepping from one room into another, working with different tools and under different conditions, but imbued with the same reverence for art and feeling the same inspiration. It is an undeniable fact that painters and photographers are apt to put on very defective glasses in judging each other's work, and a course of mental optics would benefit, both in correcting far more serious aberrations than any to be met with in a photographic lens. Where one's attention is almost entirely given to portraiture, pure and simple, much of what might be called art in photography is not required and would not be appreciated, but photographers justify the reproach that theirs is machine work when they allow themselves to sink into such a deep groove as only to see along the narrow path before them, while experience in painters' studios ought to liberalize one's judgment of a picture whether made by brush or lens. There is often, however, great bigotry in much so-called liberality, and it needs a steady hand to hold an even balance in judging camera work now that it is worthily claiming a higher place in the judgment of the world than any heretofore given it. Neither the scientific nor artistic qualities should be exalted beyond their proper places. The lens has limits, and it is not a brush, yet when those limits are fully understood it will be seen that they embrace wonderful possibilities of their own. But as always, when one departs from the beaten track, this means hard work, a great deal of trouble, endless patience, severe art training, and a thorough understanding of what is meant by illustrating. I conceive this last to be a pictorial translation of an author's

meaning, and that anything and everything which will tend to elucidate that meaning is justifiable. This remark is intended, as will be seen, to cover a wide field. The faintest conception of the true art spirit ought to keep one from making his pictures the stilted, ordinary, not to be mistaken photographs. Push photographic limits as far as possible, refusing to be bound by the traditions of the portrait studio and cutting loose from whatever can suggest it. Start with the intention to have all your accessories what they claim to be and where it is obligatory to use imitations have them as perfect as can be made. Do not adopt the penny-wise and pound-foolish policy or think it always needful to go to great expense in the studio, for a little ingenuity often goes a long way in devising useful contrivances. In many cases where I have been credited with expensive appliances, the same have been made with my own hands, and where unable to actually make the desired articles I have designed them after long and careful thought. It is well to settle in one's mind, before taking up illustrative work, whether the object, or the manner of realizing it, is the main point to be considered. If the latter, then, like the Irishman, stop before you begin, for you will not have enough enthusiasm to carry you over the inevitable discouragements ahead of you. Believe in and respect the dignity and beauty of the work, count no detail of the work as beneath your notice, use all the resources your taste and experience can suggest, and make everything give way to the definite purpose of obtaining a picture which will tell a story. Do not try to show the extreme limit of what can be done by a lens, but study simplicity and avoid using more figures than are absolutely necessary. An artist with whom I once studied, cautioned me against introducing figures into my paintings of interiors. "No matter how good everything else may be," he said, "people will pass it by and criticise the figure." Photography and portraiture have for so long been understood as synonymous terms that it seems difficult to believe the figure is not the first thing to consider even in an illustration. But such is not always the case, for however effective the figure may be, the picture, as a whole, may often be ruined by some petty detail or incongruity. This is one reason why illustrations by photography are expensive to make when they call for correct rendering of historical costumes and surroundings. It is generally wiser to select subjects which allow simple and easily procured scenery, and which, in many cases, allow the work to be done out of doors even better than in the studio. Illustrations of outdoor scenes ought to be made out of doors and the light subdued, if needful, by thin screens. As plenty of distance can be gained by this method, beautiful effects are often secured.

It is a great help to make a sketch of the intended picture and decide where the figures will be placed, as well as all the accessories, before making an exposure, and study the effect of different colors and materials. Another good plan is to arrange everything except the figures and make a preparatory

exposure on the size and kind of plate and with the same lighting you expect to use. I have known otherwise fine negatives lost by neglecting this precaution, finding after development that the plate was an old one or was slower than ordinarily used in the studio. In this connection I should mention that professionals have told me they were often tempted to return to wet plates, as the dry plates, however good when fresh, could not always be relied upon and were apt to fail when it was impossible to duplicate a negative. Looking at the picture from a painter's standpoint it must be remembered whether you are supposed to take it in doors or out, by full daylight or in the evening. Do not, if the scene to be represented would naturally appear dark in certain parts, seek to light it evenly, but think how a painter would treat it. This may lay you open to criticism from a merely photographic point of view, but you are not making a portrait. In the great paintings of such men as Rembrandt, parts of a picture are often in dense shadow, and, in a painting that would not be criticised, but the same thing in a photographic picture would, nine times out of ten, be sharply condemned. This is unjust, for lens or brush would be useless if not inspired by a skillful brain, and it does not follow that a man can arrogate to himself the name of artist simply because he uses a brush or deny it to one who recognizes the future possible for camera work. It is always hard to live down a prejudice or a pre-conceived opinion, but there is a great deal of that to be done before art in photography is fairly recognized. As in a battle, the flag must be raised high over men's heads to enable it to be always in their sight, so the ideal in any line of human endeavor ought to be kept plainly before men, so that they shall continually grow and improve, and never feel that there are no more worlds to conquer; and the best thing about illustrative work is that one can never learn it all, for every victory makes a further one possible. Perhaps, and rightly enough, there is no quality more demanded in artistic photography than originality, though it is often supposed not to co-exist with technical excellence. Photographic training by itself is apt to form a stiff and artificial style, but it is not necessary, therefore, to assume that originality consists mainly of a violation of the rules of technique. The height of art is to conceal art, and to do this requires a thorough knowledge of technique. Photography has only begun to show what it can do in illustrative work, and its progress should not be made any more difficult than is inevitable from the unavoidable obstacles in its path. Demand always creates supply and these obstacles will be gradually removed, but the attempts already made in this line of work should be judged by what has been done heretofore and not by what we hope to eventually accomplish. Wiseacres, the world over, may shake their heads and declare that art is being lowered by the camera seeking to displace the brush, but the inexorable logic of events is an overwhelming force and there is no use in fighting the inevitable.

It is not the part of wisdom to ignore difficulties but to meet and overcome them, and the greatest genius must, in this work, be governed by certain fixed rules, laboring, so to speak, in harness. The poem selected for illustration should be almost learned by heart, thought of, brooded over, and dreamed about until the fitting lines force themselves on one's consciousness. The famous painter Da Vinci was blamed by the prior of the monastery, for which he painted that wonderful fresco of "The Last Supper," because he spent days in sitting before his work without touching it. But the figures and surroundings were, meanwhile, being envolved from his inner consciousness, and when he finally took up his brush no part of the picture needed correction. Let your mental vision see the picture as a complete whole before you even think of actually making an exposure. I believe also in testing my models in an ordinary portrait before posing them for the illustration as, sometimes, an apparently good subject will prove a very poor sitter.

The exposure ought to be so nicely calculated as to leave but little work for the retoucher, but this depends largely on the sitter. It cannot be often repeated that the retoucher should have some knowledge of facial anatomy and realize he is to labor over an intricate network of muscles and nerves, each affecting the expression, and not over a flat surface with nothing beneath it. It might be well to have a school for training models, as it is very discouraging, after securing an effective pose or a fine printing negative, to find your sitter has moved. It is almost impossible to use head rests in work of this kind, and where 11x14 plates, or larger, are used expense is something to be considered. It is incomprehensible to me this utter inability of some people to face a lens, and where their nervousness or constant questions as to how they shall sit causes the loss of a good negative it requires genuine Christian charity to "think no evil." My first unregenerate impulse is to decline the sitter's further services when, for instance, a pathetic scene is to be represented and he or she seems possessed by an insane desire to be humorous. Painters are more fortunate in this respect than photographers, as their models are usually trained and are not apt to offer advice as to how they take best, as if that had anything to do with the parts you intend them to portray. The operator who conscientiously tries to bring out the thoughts of a writer is under a keener nervous strain than the sitter can understand unless he or she is a camerist.

I have learned to have the warmest sympathy for professionals, and when I hear people say "it is so tiresome to sit for a picture" I always wish to say "you don't begin to endure what the operator has to, and your work is over with the sitting, he is the one to be pittied, and not you."

The possession or lack of the true histrionic instinct of forgetting self in an assumed character is at once revealed by the model when the operator disappears under the mysterious cloth. When only the keen-eyed lens

confronts the sitter, it seems, to a nervous person, as a friend once said to me, as if the aforesaid eye was gazing into one's very conscience. The average sitter, whether willing to acknowledge it or not, is intensely self-conscious, which is the true name for what they like to call nervousness. They should for the time being merge Miss A or Mr. B in an assumed character, and it is a discouraging truth that if they cannot do this the picture will be a failure, no matter how fine the conception. Sitter and operator ought to be in perfect accord, and I do not find that there is much to choose as between men and women in sharing the above blame, one is no more self-conscious than the other. Sometimes, indeed, models are so willing to please that they wish you to arrange every finger joint or suggest to them the exact shade of expression needed, generally at the very moment you are placing the holder in the camera or drawing the slide. I do not know which is the more difficult to manage.

The operator who poses the figures and designs the picture should have nothing to do with the petty details of filling holders, placing them, drawing slides, and moving things into position. The mere physical fatigue dampens one's enthusiasm, and it is absolutely important to have the nerves under control and not be conscious of one's body.

I have said little about technical details or studio appliances deeming that it would, indeed, be bringing coals to Newcastle, but would like to speak of a few points which have proved practically useful to me. No illustrative work should be undertaken with any but the best lens. A rapid rectangle is, generally, preferable, but a wide-angle is often absolutely required and, I believe, in either case, in having it able to cover a larger plate than the one used, cutting sharp with full aperture. The studio scenery ought to be as far as possible, in real not simulated relief; plastic not painted. This allows the figures to be more naturally posed and not so apparently on a line. Most of my scenery can be taken apart and re-adjusted so that, when used with different draperies, carpets, and furniture, it can form a number of combinations. With regard to the skylight, I have discarded the use of continuous sheets of ribbed glass, a little over an eighth of an inch thick. This is covered by five sets of white shades divided into half yard pieces running on wires from side to side. Over these are three sets of black shades divided and run the same way. The shades on the vertical light slide up and down. I use an ordinary view camera as, with double holders, it permits more plates being ready before commencing work and this is likely to save much time and trouble. Competition and exchange of ideas such as this present convention, when used for the purpose of self-improvement and not mere display, ought to be of incalculable benefit and the inspiration gained by the attrition of different minds constantly raise the standard of photographic progress. In illustrative work amateurs and professionals can labor side by side and each gain from

the other. The former will learn to appreciate the almost infinite tact, patience, and hard work demanded of a professional who, on his part, will learn that the intelligent amateur helps to elevate the work to which he, himself, has perhaps given the best part of his life, and thus, by mutually disseminating a wider and clearer knowledge of photography, gain for it more thorough appreciation and admiration.

ART IN PHOTOGRAPHY.

BY G. HANMER CROUGHTON.

Many years ago (it was during the Carte-de viste rage) I was painting for a firm of photographers in Dublin, Ireland. Being in the reception room one morning I heard the principal of the establishment arguing with a sitter who did not like her portraits. He was trying to convince her that the portrait must be right because the instruments he used being the very best it was like standing before a looking-glass, and there would be as much sense in complaining about the reflection she saw in her mirror as in doing so with her portrait. The sitter answered the photographer by a question which completely silenced him, she said: "If that is true what makes the difference between good and bad photographers?"

This is my text: What is it that makes the difference now more than then? I answer emphatically—the presence or absence of art. The presence or absence of art, knowledge, or taste in the photographer makes the difference in the photographs made in his studio, makes the difference we see in the productions exhibited year after year at the exhibition of the P. A. of A. In the early days, when little or no art was practiced by photographers, the public were not so exacting, because, being ignorant themselves, they did not look for it, the difference consisted mostly in the chemical manipulations. Keeping the silver bath in order, keeping that and the collodion and developer in harmony that each should work at its best in relation to each other kept the operator busy and left little time for the artistic. How many times has it happened that, while the operator was trying to get his sitter nicely arranged, his plate would dry and so spoil his chemical effect. Is it much wonder, then, that the artistic gave way to the chemical? All honor to those photographers who in the wet-plate days produced artistic photographs as well as good chemical effects.

Whatever the dry plate may be blamed for (and you cannot read a photographic journal without finding almost all the sins in the calendar attributed to it) there is one thing it has done for photographers, and that is it has given him time to study for artistic effects of lighting and pose without the fear of spoiling his chemical effect, and by rapidity of exposure has enabled him to aim for expression the soul of portraiture.

Some croakers claim that the glue plate (as the late Mr. Gregg of this

city called them) has reduced photographic manipulations to a dead level, and that any "duffer" can now produce good negatives. If this is so (and I confess there is some truth in it) there is but one way to excel, and that is in the artistic.

Photographers have got to learn about art, both inside and outside their studios. What I mean by that is, that photographers as a rule, even those who are known as artistic photographers, are too apt to study art through the one eye of their cameras instead of studying it through the two eyes in their heads. They get so used to the photographic rendering of certain effects of color, light, and shade, that they forget to look at them with the eyes of an outsider, and get to regard the photographic rendering as right because the lens and camera produce it so.

It would be well for every photographer who wishes to keep ahead to join some art-class or school and study art independently of photography, as well as studying those books which are devoted exclusively to art photography, and to learn to look at it from an outsider's point of view. This advice will, I know, be particularly irksome to Americans who always want to go the quickest way to work, and who, unless they see some immediate advantage in it, will not care to try it. But, although the saying may be a chestnut, it is a sound and good one that there is no short or royal road to knowledge, and experience must be gained by long and often irksome effort. To see Nature with the eyes of an artist, who has been trained to see her as she is, is very different to seeing it through the lens in a photographic skylight. I have often heard photographers laugh at the efforts of artists to light a sitter in a photographic skylight, and their sneers at the failures made by them is natural enough, but it should cause thought on the part of the photographer as to the why. The light in an ordinary photographic skylight is a very trying one to almost every sitter, and is the cause, in nine cases out of ten, of a strained or pained expression.

An artist when sitting a model to paint from uses very little light, and the effect upon the sitter is better in many ways, the pupils of the eyes are larger and the expression in repose. Let the photographer watch the lighting of the faces of his friends in an ordinary room, and if he has any discernment he will see at once the difference in the quality of the light and its influence upon the faces and expressions. He will also note that in an ordinary room the roughness of textures is not noticed. But get those same faces under the photographic skylight, and on account of the volume of light the pupils of the eyes contract, and the eyelids close together, which causes the constant complaint that the eyes in a photograph always look smaller than in nature. Seeing this effect in all their sitters, photographers have come to believe it is right, and treat with disdain the objections of the sitter and their friends who miss the every-day expression, and see only a new one which they cannot account for.

Another thing which has become so familiar to photographers, that they have ceased to think it a defect, is the exaggeration of the skin texture. When I was a student, the instructor of the life-class called our attention to the fine short down all over the face of the model, then, taking us far enough away to lose the details of the skin texture, he pointed out how that down which we could not see gave a general soft blending of tints and shadows without getting any of the roughness of texture, he concluded by saying: "At best a microscopical study of the human mass would be an unpleasing curiosity." Now it would appear as if some photographers thought this unpleasant curiosity was the right thing to get, and they will not only use a rectilinear form of lens for large portraits, but will stop down till the texture of the skin in the negative is much more like what is seen through a microscope than the human skin seen at a moderate distance. Another cause of exaggeration of texture is in the lighting. The so-called rembraut or edge lighting will exaggerate texture out of all truth, and when to that is added microscopic sharpness, then truth and art are shut out. Do not think I am an advocate of out-of-focus fuzziness. I am opposed to extreme sharpness, where that sharpness is at the sacrifice of truth to nature.

At the convention at Boston there was an exhibit which attracted the attention of all. I think it was from Germany. They were portraits about 11 x 14, mostly heads, painted upon mat surface paper of some kind. I saw a great deal of them and studied them with the greatest interest and profit. They were admired by all the best photographers who attended the convention. Not one but gave them unqualified praise. They were certainly not sharply focused, according to the usual photographic standard, yet they were sharp enough for pictorial standards, and their great beauty was their truthfulness to nature. The retouching upon them was only just enough to remove the spots and blemishes due to the false rendering of color by photography. This is another abuse which has done much to bring photography under condemnation from artists over-retouching. You must do it when you make such extremely sharp negatives, particularly when you make large heads. The photographic texture is an exaggeration of the natural texture, and the pencil of the retoucher must be used, and in getting rid of this exaggerated texture the retoucher makes with his pencil another which is more unreal in its mechanical smoothness than the exaggeration of extreme sharpness. If you will use a portrait combination and do not stop down too closely, and use a diffused subdued light, these exaggerations will not be seen, the retoucher's work will be much lighter, and you will have a consequent gain in truth.

From what I have seen of the new isochromatic plate they are going to make quite a revolution in both lighting and retouching. I have not used many of them, but I am quite charmed with what I have. The breaks in

the gradations of the shadows caused by the false rendering of color, are absent entirely, and the retouching reduced to a minimum. The texture of the skin is softer and more truthful, and the general effect so superior that before long they must take the place of all others. One of the best firms in the city are using them exclusively, and speak in high terms of them.

I have confined my remarks to suggestions. To write exhaustively would be out of place where there are so many other things to attract your attention. But I would like to impress upon all young photographers the importance of studying art apart from photography, to be able to detect the untruthfulness of photography, for with untruthfulness there can be no true art. Remember you are catering for a public which every day is getting more critical, as art education spreads, and to keep your place you must head the procession not follow behind.

THIRD DAY.

The convention was called to order by President Hastings at 9.30 A.M.

The President,—Mr. Gentile has a communication to present to the association and will do so later.

I will first call upon Mr. Scandlin to report on behalf of Dr. Elliott on the progress of photography.

Mr. Scandlin presented and read the following report.

REPORT ON THE PROGRESS OF PHOTOGRAPHY.

BY ARTHUR H. ELLIOTT, PH.D.

Mr. President,—The task of making a report on the progress of photography has hitherto been one not fraught with unalloyed happiness for the individual who has undertaken it before this association. It is also a curious fact that the editors of photographic journals have always been selected to make this report. There is possibly a method in this selection, the officers of the association evidently believing that editors of journals are the only members of the fraternity having skins of sufficient thickness to stand the arrows of the critics of their work. I have on a previous occasion had to withstand these shafts. I know about how much they hurt and am here again ready to submit my effort to the same chances. But of one thing I am fully conscious and that is that those who know the task will appreciate the difficulties and have a fair charity for my effort.

Beginning with the apparatus of the professional photographer we do not find any important advances. The cameras that were used a year ago hold their places in the estimation of the practical man. In the matter of hand cameras we note some quite unique improvements. In this respect the new film camera called the Kameret is undoubtedly a marked advance in the utilization of the space within the box to secure the most compact disposition of the parts. The roll is so arranged that it occupies the space between the cone of rays from the lens and the side of the box. By this method of

disposition, space hitherto not used has been made available and the most compact hand camera now in the market is the result. Coming to the use of plates in hand cameras we must give the palm to the new magazine camera of Anthony. This embodies several new devices that are quite ingenious. First, the plates are made to come into focus automatically by means of a spring, and after exposure a single push on a button takes the exposed plate out of the way into a well, leaving another plate in place for further use.

DEVELOPING.

By E. DECKER.

"There is a great deal of difference between seeing and observing." There is a mountain of truth in a mole-hill of words in that quotation, which will apply to developing as well as many other things. It is merely putting in "brains Q. S." with the other constituents of the developer, but that makes all the difference (except through pure luck) between a negative that will make a photograph that is a joy to look at, and a piece of paper with a blotch of silver over it. New developers and new developing agents can be obtained from nearly every one of our photographic journals. They are probably all good, only some may be better than others. It is not so much the formula, but the way it is used that gives the result. There are probably no two persons using the same plates and developer that will produce the same quality of negative. One will only see that the image makes its appearance in due course of time, will see that it continues to develop, and when he sees that it is sufficiently dense will remove it from the developer. Another will not only see when the image appears but will observe whether it is too slow or too quick and will add a little force or apply the breaks as it may need. He will observe the exact time when it should be removed from the developer and whether it should be washed very quickly before applying the fixing or whether a longer washing would be better. Whether pyrogalllic acid, eikonogen, hydrokinon, iron, or any of the very latest developers should be used, should depend upon the observation of each one using them. Each one may be better for some special purposes than any or all the others. For general use, however, each person should adopt some special developing agent, learn to use it and stick to it. Have also a standard developer, but as there are many exceptions to most rules, so remember that you must look out for these exceptions in the way of different plates, different exposures, and different subjects, and strengthen or weaken your developing agent or your alkali or add a retarder.

Among all the old or new developing agents "pyro" still holds the lead and from all appearances will continue to do so. So far as my own observation goes it gives better strength, better detail, better printing qualities, and, for an over-timed or under-timed plate, a better negative than any of the others. It may not make so handsome a negative as some of the others, but it

is not the beauty of the negative itself that is wanted, but the beauty of the print to be made from the negative. It is true, it may stain the hands, but that can be remedied by using a pair of rubber gloves. The staining of the negative itself, where it goes so far as to be a detriment to its printing qualities, can be easily remedied, but in most cases, particularly where it only leaves a slight olive color, it is much preferable to what is called "a wet-plate effect." You can make with "pyro" a negative as "thick as a board," or one as delicate as the bloom on a young lady's cheek, with the same kind of plate and the same exposure.

With the quickest plate a line drawing can be copied that will leave the lines pure black and the whites white paper, or all the detail in lights and deepest shadows in the portrait of the fairest blonde dressed in her bridal robes. To develop a first-class negative pre-supposes a correct, or nearly correct, exposure of the plate. Perfectly correct exposures are, and must be, extremely rare. It would take a long mathematical calculation, and very sensitive instruments to give the exact strength of light, with its shade of color, and more exact shutters to our lens than we now have, with an operator at the shutter, capable of taking advantage of all the mathematical and scientific points, to "touch the button" at the exact instant of time to get that exact exposure. Such being the case, a "standard developer," while being "handy to have in the house," can be very seldom used without some change, if the very best effects are truly sought for.

Have your sulphite of soda and your alkali of a standard strength, add the pyro only when you are about to use the developer, make a little stronger solution of pyro for emergencies and have your bromide ready for use. Then use all with discretion, not only seeing but observing.

Have you ever thought how much developing a plate is like creation? Do you ever think that you are creating a little world every plate you develop? The developer is poured over the plate and soon the tops of the highest mountains appear in the shape of the highest lights, then the lower hills as the lighter shadows, then the rolling and flat earth as it graduates into the deep shadows represented by the sea's lay, we so develop our plates that we can say when finished, "behold it is good."

ORTHOCHROMATIC PHOTOGRAPHY.

BY G. CRAMER.

In my lecture, delivered at the late Washington Convention, I have given the outlines of the history and description of ortho or isochromatic photography, both terms meaning the same, viz.: The art of *correctly* or *equally* rendering in monochrome the various colors which, in the ordinary process, have such a different effect on the sensitive plate that blue and violet are reproduced much lighter, yellow and orange much darker than they appear to the eye. The orthochromatic process is receiving the highest attention

abroad, while on this side of the Atlantic we have been considerably behind the times so far, but with the well-known determination of our people to march in the front ranks of progress, we shall soon make up for lost time, fully acknowledging the importance of orthochromatic photography. Inasmuch as the great problem to make photographs in natural colors is being far from solved, we must aim to accomplish the next possible, to reproduce the colors in monochrome in the true gradations as they appear to the eye.

American manufacturers have commenced to give orthochromatic plates their attention, and I for one have spared neither trouble nor expense to produce colored sensitive plates that meet the requirements of photography in its present advanced state. In the commencement I was assisted by the talented Boissonnas of Geneva, Switzerland, known in Europe for his success in this direction, but whose experiments were unhappily cut short by his untimely death. Later on I availed myself of the offers made by the well-known B. J. Edwards of London, and Attout Tailfer of Paris, whose isochromatic plates have a great reputation in Europe, and I have followed their example in adopting the name "Isochromatic." I am now in the position to furnish plates that combine great speed and fine quality with good orthochromatic effect without the use of a yellow screen. The yellow screen which serves to filter the light, and is either a yellow glass placed behind the lens, or a yellow pellicle inserted with the diaphragm, necessarily slows the action of the light, and demands a much longer exposure in direct proportion to the depth of color of the yellow glass or pellicle employed. It also causes trouble and annoyance in focusing. It has been my aim to dispense with it, and I have succeeded in preparing rapid plates which are sufficiently orthochromatic for landscape and portrait photography without the use of a yellow screen. For copying oil paintings where long exposures are not objectionable, and where it is imperative to secure the fullest orthochromatic effects, I prepare a *slow* plate especially for this purpose.

It has been stated that the orthochromatic effect can be obtained with ordinary plates, simply by the use of a yellow screen, but this idea is erroneous. The plate must have the elements of color sensitiveness in itself, and in comparing orthochromatic plates they should be tried without a yellow screen to determine their merits.

Now let us see what are the advantages of an orthochromatic plate over an ordinary plate, for instance, in landscape photography. Let us imagine a landscape before us, above the blue sky with white clouds, in the horizon the distant hills, in the foreground foliage in the beautiful shades of autumn. The ordinary plate would take the sky white, being just as sensitive to the light blue as to white rays, and therefore will show no clouds unless they are of a darker shade. The distant hills would only be faintly visible and the foliage be lacking in detail. The orthochromatic plates would give us a soft gray sky, not white, but with beautiful white clouds ; the distant hills just

as distinct as you see them in reality, and the foliage with all the various gradations, from the finest high light to the deepest shadow, every leaf being clearly detailed, and every blade of grass standing out from the rest. In all it gives us just what we see with our own eyes, except the colors. For portraits we will consider to photograph a pretty rosy-cheeked girl from the country, rosy cheeked, but a little freckled, with a blue dress and yellow trimmings, and with auburn hair. The ordinary plate will give her a fair face, but what a job to retouch all the freckles. The blue dress will appear like a white one, the yellow trimmings will be too dark. Her hair will show a great lack of detail, and appear the same as black hair. While the other plate will give, if anything, a bolder, rounder image. Freckles will not be visible to a greater extent than you see them with your eyes, and the portrait is generally smaller than the original, as they are almost entirely invisible. The hair will be of a medium shade, and as full of detail as that of a brunette. The dress will be of a proper tone, the yellow trimmings in harmony with the rest.

Now for another portrait. A gentleman from the country with blue eyes and straw-colored hair, fairly sunburnt, and with a clear white forehead. You know these kind of subjects (I believe there is no photographer who does not get some of them). In his photograph the eyes are a colorless spot, the hair too dark, face without the roundness and life it should have, with a solid white forehead. The isochromatic plate, on the other hand, does justice to the eyes and hair, and gives tone to the forehead, and roundness and gradations to the face. For copying paintings or colored drawings they are the only plates that can be used with success, the reason for which I do not believe it necessary to further illustrate, as you will observe by looking over the various pictures on exhibition at this meeting. I wish further to state that in developing the isochromatic plates you must bear in mind that they are very sensitive to the yellow and orange light, and nothing but a dull ruby light can be used with safety, with the precaution to keep the plate away from any light as much as possible.

BROMIDE ENLARGING.

BY G. D. MILBURN.

Ladies and Gentlemen:

My purpose this evening is to make a practical demonstration before you of enlarging a 5 x 7 cabinet negative up to a 25 x 30 bromide print on Eastman's Permanent Bromide C. Paper, using the arc electric light as means of illumination. This to some of you may seem a needless exertion inasmuch as you may not use bromide paper in your studios and therefore perhaps you think you would not care for it, because you may argue "so many of the so-called cheap photographers use it"; be this as it may, many of our very best photographers in this country, as well as Europe, use bromide paper, pro-

ducing exceedingly artistic effects and to great advantage to their ledgers, therefore needless to say of great advantage to themselves. Enlarging on bromide paper ought to be of interest to all of you because a good enlarging process is a great *desideratum* in every first-class photographic studio, though not having had the advantage of using a process of this kind some of you may not feel its necessity.

It is a well-known fact that in the average of cases small size negatives give better satisfaction to patrons of photographic studios than larger ones. There are many reasons for this, in which the lenses used play no small part, causing more or less distortion, to a much greater degree in large work than in small, the operator is more accustomed to small work, it takes less time of exposure and costs less if a small plate is spoiled, therefore perhaps the operator is more willing to try it over if the first sitting is not up to his usual standard. Many other reasons could be enumerated in support of my assertion that prints from large negatives as a general rule do not give as good satisfaction as prints from small negatives.

Having produced a good small negative which pleases the sitter, it is a very easy matter, by using a little honorable business tact to sell your customer a good artistically enlarged picture from the same negative. Or will you argue, "A photographer has not the same right to call attention to his goods that other respectable business men have," or perhaps you will say, "It is not necessary to call especial attention to our large work, for our customers are aware of our facilities for producing that class of work before entering our studios." The latter is no doubt true in many cases, but experience has taught every first-class business man in the land that his goods must be prominently brought to the attention of customers and the public time and again if success is to be his. In other words I contend that while you practice photography as an art it behooves you to also practice it as a practical business man, and with that end in view I wish to call your attention to the bromide process as a very valuable auxiliary.

A very successful method of introducing large work, as practiced by many, is to have an enlarged print ready for the purpose of showing to the previously selected customer when the small contact prints are called for, then by slipping the said enlargement into a convenient and suitable *pass-partout* or frame, explaining in the meanwhile the different styles in which the enlarged picture can be finished, such as crayon, oil, or pastel, a sale will invariably follow, and even if occasionally no sale is made the loss in cost of material for making up the print is very trifling indeed.

When first the bromide process was introduced in this country there was much speculation rife as to the permanency of bromide prints, but this has ceased now, for it has been conclusively proven that when bromide prints are properly made from good permanent bromide paper they are as permanent as any other photographic prints whatsoever. To prove this I call your

attention to Professor H. S. Starnes's, of London, experiments [see *British Journal of Photography*, Nov. 2, 1887,] and we have much other substantial evidence in corroboration of this statement; besides we have our own tests and experiments.

When the bromide process was first introduced in this country many photographers went into using it, some only soon to give it up, claiming that it was much more difficult than they had anticipated. This was chiefly due to the great degree of latitude of possibilities in results as well as the different methods which can be adopted to secure good results; from a strong negative it is possible to produce either strong or soft prints and the same from a soft negative. (This I will endeavor to explain more fully in my demonstration.) This yielding flexibility of the process proved a stumbling block to some of the busy photographers on their first attempts. However the demand for Eastman's bromide paper has been on the steady increase from year to year, the last year's sales being much larger than any of its predecessors.

Some photographers are successfully using hydrochinon and also eikonogen as developing agents. After extensive experiments we have concluded that the iron oxalate is the very best developer for bromide prints. However, I conclude there is more latitude in the actual development with the two former developers, inasmuch as the operation can be commenced with weak developer, increasing in strength as it is found necessary. On the other hand, with the oxalate developer we get a purity of white and blacks unattainable with the others.

To proceed with the demonstration: If upon examination of the negative to be enlarged it is found difficult to determine the correct amount of exposure to be employed, do not venture to expose a large sheet of bromide paper, but, as a guide, place in position on the easel a small piece of bromide paper; that is, after the image has been thrown up to the proper size and focused sharp, then expose and develop.

If daylight is used for exposure care must be taken to permit as little time as possible to elapse between the exposure of guide and print, as the light is apt to vary, making your guide useless. On dense parts of the negative extra time can be given on the same plan as vignetting, and very deep shadows can easily be held back by means of a shaped card on the end of a strip of glass.

The amount of bromide solution used in the developer has great influence on the quality of bromide prints. For weak negatives the amount of bromide solution can be doubled or trebled to advantage, and for strong negatives it can be reduced to half or a quarter the normal amount. However, with fresh, normal developer some bromide solution ought always be used, or a measly, mottled deposit may occur in the print.

To insure permanency care must be taken to remove all the iron solution after development by washing thoroughly with acid solution and all white

light excluded until the print is thoroughly fixed in the hypo, and the final washing must be very complete.

The apparatus necessary for bromide enlarging, as you see, is very simple, a camera, lens, and easel being the most essential parts.

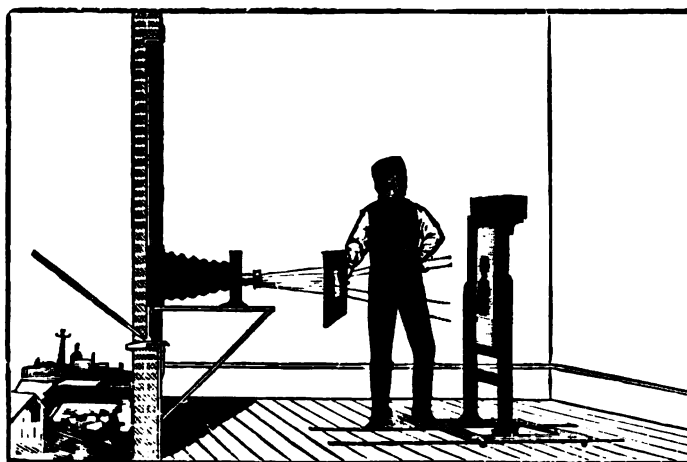


FIG. 1.

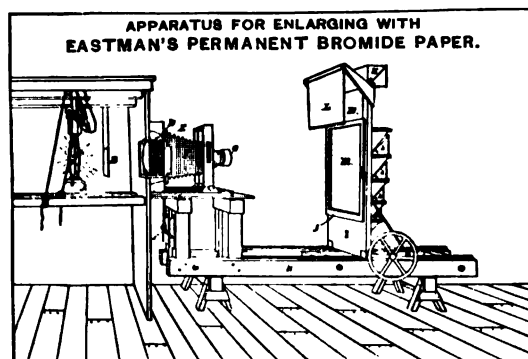


FIG. 2.

Daylight is very good for enlarging, giving a smooth, even illumination. See Fig. 1. However, when a large quantity of work is to be provided for the arc electric light is most convenient as it is powerful and practically uniform. See Fig. 2.

Second, after all the plates in the magazine of the camera have been exposed the camera may be loaded up again attaching a reservoir box to it, containing a new lot of plates, which are readily transferred to the body of the camera by the use of a couple of slides. The empty box can now be used to hold the exposed plates in the camera, and these are removed by

attaching it to the bottom of the camera and with the movement of two slides the plates fall out to give place to those that are to be exposed afterwards.

When we remember that all these transfers are accomplished in open daylight, we must confess that this is a decided advance in the construction of hand cameras. Yet another hand camera must take a little of our attention for a moment. This is the Hetherington. Here we have a camera using plates that are arranged pretty much as the leaves of a book. As each plate is exposed it is turned down out of the range of the lens just as you would turn down the leaf of a book if it was stood up on its back closed. Each plate is turned down, and a spring brings a new one into place. This is a most ingenious piece of apparatus, but as soon as the plates are all exposed you have to resort to a dark room to re-fill the plate holders.

In the matter of lenses by far the most important step has been taken by Carl Zeiss in the adaptation of the Jena glass to photographic lenses and the construction of a lens in which the chemical and visual rays come to one and the same focus. Yet another improvement is the use of lenses so corrected that they may be used at very short focus and wide angle without the distortion hitherto encountered in lenses of this character. There is no doubt that this Jena glass, which has done such wonders in the field of microscopy, is destined to teach us some new things in the world of photography. While on the subject of lenses we must not forget to speak of the efforts of the English lens makers to come to some understanding in the matter of threads and flanges of the lens mounts. Although nothing definite has yet been accomplished, a report on the subject has been approved by the principal English lens makers, and with a little further modification there is no doubt that a uniform screw thread for the lenses of the same size, also a uniform thread for tripod screws, and a uniform system of marking the diaphragms of lenses, will be adopted by all the English makers and probably by those of America, France, and Germany. If this can be accomplished the photographer will be in the same position as the microscopist in having all his lenses of the same size fit into the flanges on his cameras or into adapters that also are uniform for all makes of lenses.

While we are noting the novelties in photographic apparatus, a word about the new rival of the photographic operator is worth our attention, we mean the automatic photographing machines, where you put a nickel in the slot and get your picture taken, framed, and all. But they are at present not worth more than a word, for all we have seen are easily distanced by the poorest tin-type artist that visits the smallest country town. Nevertheless, these machines are the beginning of a series of inventions that will make a likeness of the sitter in front of them, and purely, by mechanical motions, as certain in their action as those of a clock. At present they are more of a curiosity than an innovation in photographic work.

Since we last met quite a furor has been seen in the matter of color photography. Professor Lippman, of France, startled the world with the announcement that he had discovered the secret of taking photographs in their natural colors. After developments proved that he had repeated the idea of Edmond Becquerel, made twenty-five years before, except that he had used glass plates with greater success. Practically his work is of little value, but it is interesting as a development of the theory of interference in light. The pictures he obtained are of the same character as the colors of the soap bubble in the sunbeam or the film of oil on water.

Working in the same field of research but with much better experience to guide him, our own Carey Lea has shown us some new wonders in the properties of silver chloride. Indeed, he has discovered that the basis of modern photography, the metal silver, is capable of existing in several distinct colored modifications. I cannot now take time to go into details upon this most interesting scientific development, and must content myself with referring my hearers to the photographic journals and the *American Journal of Science* for the past year.

The Austrian photographer, Veresetz, who also experimented in the field of color by photography, did work that is but a modification of the work of Carey Lea.

Some means of determining the actinic value of light in its relation to photography has long been a *desideratum*, and the English experimenters, Messrs. Hurter and Driffield, together with Captain Abney, have arrived at some interesting results, showing that the exposure determines the gradation of the lights and shades in the negative. Incorrect exposure will not give an harmoniously graded negative, and furthermore, this incorrect exposure cannot be improved by a change of development. They have devised a method of determining the proper time of exposure, but at present the apparatus is more scientific than practical.

A much more convenient apparatus for the purpose of determining the time of exposure, is the neat little actinometer of Ballard's, which depends upon the measurement of the actinic power of the light on a subject by finding out how long the photographic, that is, the blue and violet rays, take to fade from a phosphorescent tablet that has been exposed to their influence. Its mode of operation is very simple, a small tube, blackened inside, has at one end a tablet of luminous paint, so arranged that it hangs by a hinge, which allows it to be exposed on the subject for half a minute. The tablet is then closed over the tube and by looking into the latter, the time of fading to a standard tint, also in the tube, gives a figure that is a measure of the photographic power of the light reflected by the subject. It is practical and its indications are just as good as the sensitometer with which we determine the rapidity of our day plates.

This same actinic power is modified by our use of the diaphragms in the

lens. But here also some experiments of the past year have given us some new light. Dr. Michelke, of Germany, has shown that if we reduce the size of the opening in the lens to one-fourth we shall have to increase the time of exposure, not four times, as would be expected, but twenty per cent. more, or nearly five times. By using yet smaller openings we must add still more to the time, and with one-thirty-sixth of the opening the time will have to be forty-eight times as long, or an increase of one-third the calculated time for correct exposures with a corresponding larger stop. In a word, if the time of the exposure is correct with a stop of one inch, and it is desired to use a stop of one-quarter of an inch, we must increase the time of exposure not four times but nearly five times.

In the field of orthochromatic photography, as it is called, there is not much new to report, but we are very glad to note that our American manufacturers are making some of the best dry plates of this kind to be found anywhere.

We are surprised that American photographers have not been more active in the adoption of these plates in their portrait work; for there is no doubt that they have an immense amount of retouching, not to speak of the better gradation of light and shade in the costumes of the sitters.

We hear rumors of the advent of collodion plates that are as rapid as the gelatine dry plate, but we have not heard of any practical use of these plates. It is stated that at the present time they are twice as costly as the gelatine plates, but it is only a question of time when we shall have them in completion; and for many purposes they may be found of advantage, even at double the present prices of dry plates, notably in photo-mechanical work.

* Flash-light photography has many workers, and it is constantly being put to good use, and its manner of application being improved. Various devices have been employed to overcome the hard shadows that were to be found in the first pictures made by its use. The methods of doing this are in the division of the magnesium powder into a number of small charges rather than using it in one large flash. These charges are fired simultaneously by the use of a number of gas jets that are made to impinge on pieces of gun-cotton, on which is placed the magnesium, the projection of the many flames at the same instant being controlled by some device that regulates the pressure of the gas, and increases it at the same moment at every jet. Pictures made by these methods are very hard to distinguish from those made by daylight.

The color of the magnesium light is capable of much modification, and in this respect may be a most useful adjunct to the orthochromatic plates. Two German experimenters have applied this in photomicrography using a mixture of perchlorate of potash with magnesium, chloride of sodium, and tartrate of barium, with some excellent results.

The development of the photographic plate has received a good deal of

attention during the past year. In the matter of developers there is not very much to report, but quite recently paramidophenol a substance related somewhat to eikonogen has been proposed as a new agent. Like eikonogen it is not very soluble, and it is also rather expensive, but if it is found to have any decided advantage the chemist will soon find a way to make it cheaply. At the present time it is said to possess good developing powers and its use gives no stains on the films. Compared with eikonogen and hydroquinone, it oxidizes more rapidly than either. It is consequently more active than these developing agents. But its most important advantage is the fact that it will not color the film and can be used for a large number of plates in succession. It is said that as many as twenty plates may be developed in the same bath without causing the least stain on the negative. From these indications it would appear to be as rapid as pyro without its staining defects.

In connection with the subject of developers, the interesting experiments of Doctor Waterhouse deserve a moment's attention. He has found that by the addition of a very small quantity of thiocarbamide to the developer of eikonogen it is possible to produce a positive image instead of a negative one. This is a matter of small importance to the ordinary photographer, but to those who have to work the photo-mechanical processes it is a saving in the steps to be taken for the production of the final printing plate, for it saves the production of a positive from the usual negative.

Coming now to the printing processes, we must record the revival of the use of gelatine as a substitute for albumen, with more improvements than it has seen in many years. Aristotype paper has made some very important advances during the past year, and if the march of progress is continued it may supplant albumen paper entirely as a basis for the photographic print.

Platinum printing still holds its own with amateurs, and it would be a source of profit to the professional photographer, in the better class of work, if he would but take time to overcome some of the earlier difficulties. In Europe they are far ahead of us in this matter.

A new printing process was presented to the photographer by two English chemists some months ago, which depended for its action upon the change made by light in the chemical structure of a dye-stuff made from the coloring matter known as primuline. This substance has the curious property of uniting with different organic matter, and producing with each one a colored print. If, therefore, we print in diazo-primuline from a star-shaped negative we can make each of the star rays of a different color, by the use of different organic matters put on as developers in the form of a paste. The great drawback to the success of the process is the color of the ground, which is of a bright yellow tint. Up to the present time the inventors have not been able to change this color, but if it is ever accomplished we shall be in possession of a printing process of great beauty, and

capable of many variations this, too, without the use of silver or any other metallic salts, as the substances used are entirely of organic origin.

The application of photography to astronomy continues to give the most wonderful results. Stars unseen by the human eye are detected by the photographic dry plate. And some recent photographs made in Sydney, Australia, show that the stars of the Milky Way are really larger than they appear to the eye through the telescope. This is due to the fact that they emit many blue rays which are invisible to our sight, but whose light affects the photographic plate.

Photomechanical printing processes have made important advances in color printing in which they are now producing some of the most beautiful work ever attempted by the aid of light and the printing press, and without the aid of the human hand. In this respect the work of Bierstadt, of New York, surpasses anything of the kind ever attempted before. By the use of colored screens, he takes several negatives of the different colors that make up the painting he wishes to produce by photography, and by means of these he prepares corresponding gelatine surfaces that serve as the basis for the printing of the colors by superposition, as in the lithographic methods. The results obtained are very beautiful and are almost a perfect *fac simile* of the original picture. It will be by some such process as this that we shall be able to make, not take photographs in their natural colors. Such is a very rapid survey of the advances of our art since we last met. In the brief space that could be given in such a report as this, many really important steps of progress have received but a word of mention. This is not because of the lack of appreciation by the reporter but from a fear that during these warm days a long disquisition would weary you.

If I have failed to do all that you have expected of me, please remember that I am only an editor, and while I fully appreciate the honor you have conferred upon me, I hope I may not be forgotten in your charity.

A New Photographic Objective.

BY ERNST GUNDLACH.

In view of the rapid and continually increasing succession of inventions and improvements made in all branches of photography, and of the important part which the objective plays in the progress of the art, it is a surprising fact that, since the appearance of Steinheil's "Aplanat," so many years ago, no real optical improvement has been made in the construction of photographic objectives, but that, despite the constantly increasing demand for a better lens, the principle discovered by that eminent optician, and the particular type of objective based on that principle, steadily remained the standard in the manufacture of photographic objectives since its first introduction and up to the present time. In view of this remarkable fact the writer takes particular pride in presenting herewith to the photographic and scientific world a description of a new objective, which, after long and most ardent endeavor to perfect, is now deemed ready to be submitted to the criticism of the interested scientist and to the practical trial of the intelligent photographic worker. This is done with the full belief that this invention will not only be generally accepted as an

essential and valuable contribution to real progress, but that it also may serve to incite the minds of inventors to new ideas and further improvements.

The invention and its principle is of a purely optical nature, and consists of a successful transformation of the Steinheil achromatic double meniscus—the constituent of his “Aplanat”—to a triple meniscus of novel and peculiar form, the theoretical principle and great practical advantages of which are as follows:

Owing to the fact that the ratio of the color-dispersive power of flint-glass to its medium refractive power is greater than that of crown glass, an achromatic lens is produced by the combination of a positive crown glass-lens with a negative flint-glass lens, the dispersive power of which is equal in amount to that of the crown-glass lens, for with equal amounts of dispersive power the medium refractive power of the crown glass lens is greater than that of the flint-glass lens, and the preponderant part of that of the crown-glass lens forms the positive focal power or focal length of the combination, thus being the true constituent of the achromatic lens. (Focal power is here termed the magnifying or reducing power of a lens as expressed by the reciprocal value of its focal length.) Now it is obvious that the greater the dispersive power of the flint glass employed the lower a focal power of the crown-glass lens will be required for a given focal power of the combination or achromatic lens, and consequently the smaller will be the amount of color-dispersion to be corrected by the flint-glass lens. Furthermore, regarding the established fact that in an achromatic lens neither the spherical nor the chromatic aberrations can be completely neutralized, but that more or less small proportions of these errors (the aberrations of second order, consisting in an incomplete or under correction of the central part or towards the center, and a corresponding over correction toward the edge of the lens) will always remain, it follows from the foregoing conclusions that the amount of chromatic aberration of second order in an achromatic combination will be the smaller the greater the dispersive power of the flint glass employed. While thus the amount of chromatic aberration of a single or uncorrected lens depends with a given kind of glass on its focal power or focal length alone and is to be corrected accordingly, its spherical aberration, however, depends also and in a higher degree on the form of the lens—that is, on the difference of the curvatures of its surfaces—and is the greater in amount the more said curvatures differ from each other. An equal-sided lens is, under ordinary conditions, of minimum, a meniscus—that is, a concavo-convex lens—of maximum spherical aberration. The spherical aberration of a positive lens may therefore be corrected by a negative lens of almost any focal power if the curvatures of the same can be made to differ sufficiently to produce an amount of spherical aberration equal to that of the positive lens. If, therefore, the positive lens is of minimum spherical aberration—that is, equal sided, or nearly so—a negative meniscus of much lower focal power than that of the positive lens may correct said aberration, and since the difference of the focal powers of the components forms the focal power of the combination, the latter will in this case be comparatively great, or, *vice versa*, the focal power of the positive component will be comparatively small, and consequently the amount of spherical aberration to be corrected by the negative lens will be small, leaving a correspondingly small amount of aberration of second order. If, however, the positive lens of the combination is itself a meniscus, as is the case with the photographic objective, then the focal power of its negative or correcting lens cannot be made to be much lower than that of the positive lens, or else it would be impossible to produce, even with the greatest admissible difference of its curvatures, the amount of negative spherical aberration required for the correction of the positive lens, and consequently the remaining focal power, respectively that of the combination, will be small in comparison with that of its positive component. Hence the focal power of the crown-glass lens in an achromatic meniscus of a given focal power is to be comparatively great, and being besides this a meniscus itself, its spherical aberration must be accordingly great, thus leaving a correspondingly great amount of aberration of second order after being corrected by the flint-glass lens.

Having thus pointed out the distinguishing characteristics of the two optical aberrations and explained the proper mode of their correction, it remains to illustrate the principle after which both corrections are accomplished at the same time in the modern photographic objective.

Figure 1 of the accompanying drawings is a sectional view of a meniscus of the ordinary photographic objective, the components being cemented together. Fig. 2 shows a meniscus, the spherical aberration of which is corrected by a negative lens made of a glass of equal refractive power to that of the positive lens, the components not being cemented together. Fig. 3 shows a cemented meniscus in which the chromatic but not the spherical aberration is corrected by a negative lens made of a high-dispersive flint glass. Fig. 4 represents an

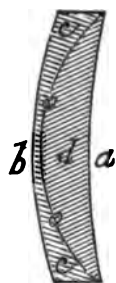


Fig. 1.



Fig. 2.

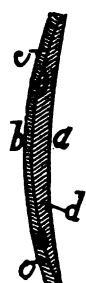


Fig. 3.

uncemented meniscus made of the same kinds of glasses as Fig. 3, but both the chromatic and the spherical aberrations being corrected. Fig. 5 is designed to demonstrate my novel way of so altering the form of the meniscus, Fig. 3, that both optical aberrations are corrected and at the same time the components of the meniscus can be cemented together; and Fig. 6 shows the alteration completed, thus representing in sectional view my new photographic meniscus or objective. Fig. 7 is a longitudinal section of a compound photographic objective consisting of two meniscuses of my new type.



Fig. 4.

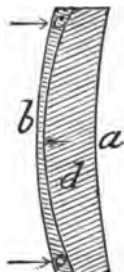


Fig. 5.

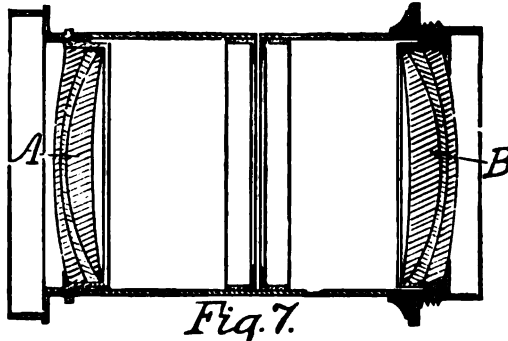


Fig. 6.

The meniscus, Fig. 1, is composed of a positive crown-glass lens *d* and a negative flint-glass lens *c*, the latter being of lower focal power than the crown-glass lens, thus leaving the preponderant part of the latter as the focal power or focal length of the combination. The facing sides *e* of the lenses are of equal radii of curvatures and are cemented together, this arrangement being a necessity in photographic lenses. The fact that flint glass has not only a very high color-dispersive power, but that also its medium refractive power is greater than that of crown glass, permits the cementing; otherwise the flint-glass lens would have to be of a still shorter meniscal curvature, so as to form a space between the lenses, as shown in Fig. 2, in order to produce with its lower focal power an amount of spherical aberration equal to that of the crown-glass lens.

Suppose now the flint-glass lens *c*, Fig. 1, to be made of ordinary flint-glass, such as is

commonly used in telescope objectives and similar achromatic lenses. Then the internal sides *c*, being, as may be assumed, of the proper though unusually short curvature as required in this case for the correction of the spherical aberration, will be much too short for the proper correction of the chromatic aberration, thus producing a corresponding over correction of the same. If, then, the curve *c* be flattened, the dispersion of both lenses will be reduced of course; but that of the flint-glass lens will diminish in a higher ratio than that



of the crown-glass lens, owing to the higher dispersive power of the former, and thus a point will soon be reached at which the dispersive powers of both lenses are equal in amount, as required for the correction of the chromatic aberration. Fig. 3 is to illustrate this case, showing the inner curve *c* as being considerably flatter than in Fig. 1 and of the proper radius for the purpose, as may be assumed. This change, however, interferes with the correction of the spherical aberration, which is thereby reduced to a corresponding under correction, as is obvious.

It will now be readily understood that owing to the peculiarly conflicting relations and the distinguishing characteristics of the two aberrations, as shown, it is impossible to correct both aberrations of a crown-glass meniscus at the same time by the single means of a negative lens made of ordinary or any other high-dispersive flint glass in the manner described and illustrated by Figs. 1 and 3. Considering, however, the causes of this impossibility, as shown, it suggests itself that with a flint glass of a certain low-dispersive power, or with two glasses of a correspondingly low difference of their dispersions, the desired result may be fully accomplished, and that such special properties of the glasses as required for the purpose may be accurately predetermined by calculation. This principle was discovered by the late mathematician, Steinheil, of Germany, many years ago, and has been ever since and up to the present time generally adopted by all the leading opticians in the world. In fact it has been and is yet the basis *par excellence* for the construction of photographic objectives.

In my foregoing description of the optical aberrations I have shown that the amount of the chromatic aberration of second order in the achromatic lens will be the smaller, the higher the color-dispersive power of the flint-glass employed. The same is the case with the spherical aberration of second order, for since the focal power, and with it the chromatic aberration of the crown-glass lens are reduced by the use of high-dispersive flint-glass, as I have shown, its spherical aberration must also be reduced in the proportion. Let us now apply these rules inversely to the modern photographic objective described, and it appears that, notwithstanding its valuable and superior properties, a serious defect is, nevertheless, inherent in the same, consisting in an excessive amount of aberrations of second order as an inevitable result of the employment of a flint-glass of extremely low dispersive power, and the reduction of this defect to an imperceptible minimum is the object of my improvement, which I describe as follows:

I employ in my new photographic objective the ordinary telescope flint-glass, or even such of still higher dispersive power, and I form and arrange the whole in such a novel manner that both the spherical and the chromatic aberrations (of the first order) will be

corrected at the same time. Thus I secure the great value lying in the employment of high-dispersive flint-glass, and accomplish the desired purpose under full preservation of the advantages otherwise attained by the use of low-dispersive flint-glass, as in the old meniscus described.

Let us refer again to the meniscus, Fig. 3 of the accompanying drawings, in which a flint-glass of high-dispersive power is assumed to be employed, as described, and it will be remembered, as I have shown, that in this form of meniscus the correction of the chromatic aberration requires the internal sides e of the components d and c to be of much flatter curvature than those in Fig. 1, where a low-dispersive flint-glass is employed, but that with such flat curvature the spherical aberration is only partly neutralized, respectfully, under corrected. A simple way, however, of completing the correction of the latter without disturbing that of the chromatic aberration will be to shorten the meniscal curvature of the flint-glass lens c under preservation of its focal power.

Fig. 4 represents the type of aplanatic meniscus thus formed, and, indeed, this form would be a great improvement over that now in general use were it not for the fact that the lenses cannot be cemented together, and thus the two surfaces e and g be allowed to cause reflections very injurious to the photographic image or picture. Let us, therefore, return to the meniscus, Fig. 3, and suppose the flint-glass lens c to be flexible, the crown-glass lens d , however, to be in a fluid state. Let us further presume the whole to be inclosed in a vessel for the purpose of preserving the outer form of the meniscus. Let, then, the edge of the flint-glass lens c be bent off the side b of the vessel toward the side a , while the center of the lens is held in its place against the side b of the vessel, as illustrated in Fig. 5, and indicated by the arrows. This operation will shorten the meniscal curvature of the lens and increase its negative spherical aberration without disturbing the chromatic correction of the combination. Let the operation be continued until the flint-glass lens has attained the form presented in Fig. 6, assuming that at this curvature the spherical aberration of the lens has reached the required amount. This is the point where both aberrations are corrected in the combination, and, therefore, the desired result is accomplished.

The form of the crown-glass lens d has, by the described operation, certainly been changed at the same time with the flint-glass lens, as will be seen, apparently, and in fact being now of but little less aberration than the crown-glass lens d , Fig. 1; but the superfluous part of it has passed over to the other side of the flint-glass lens, forming there a new crown-glass lens f —viz., a negative meniscus of nearly the form as if it had been directly separated from d by a cut. Thus these two new lenses d and f present combined an amount of spherical aberration but little greater than that of the crown-glass lens d , Fig. 3, and much smaller than of d , Fig. 1. Hence its correction by the flint-glass lens will leave an accordingly small amount of aberration of second order. Furthermore, it is obvious that the focal power, and consequently the dispersive power, of the combined crown-glass lenses d and f are also accordingly diminished as against that of d , Fig. 1, being much lower than the latter, and, therefore, a correspondingly small amount of chromatic aberration of second order will remain, as follows already from the simple fact that a high-dispersive flint-glass is employed, as shown before. Thus the object of my invention has been fully accomplished by the described transformation illustrated in Fig. 6, as will be clearly understood, and said diagram may therefore be regarded as being a true representation of my improved aplanatic meniscus, which, as will be seen, forms a triplet of a novel type, consisting of one positive and two negative meniscuses of such forms as to permit their cementing together, and being combined in such order that the concave side of the positive meniscus forms one and the convex side of one of the negative meniscuses the other side of the combination, and the sides or surfaces of said meniscuses being of such proportional curvatures as to comply with the requirements of aplanatism, permitting neither over nor under correction of any of the optical aberrations to exist in the combination.

In conclusion, two practical advantages of my new triplet, over the ordinary meniscus, are as follows:

1. The flint-glass lens, being enclosed and protected by a crown-glass lens, can be ground extremely thin, and thus its yellowish tint be made imperceptible.
2. The flint-glass lens is completely protected against oxidation and mechanical injuries.

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SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Society of Amateur Photographers of New York.—Many of the members are away on their vacations so that little work has been done at the rooms. President James H. Stebbins, Jr., appointed W. M. Murray, Edward Leaning, and Dr. L. H. Laudy as a committee to take charge of the Bausch & Lomb Shutter contest. Mr. Murray declined to serve, and Mr. C. C. Roumage was appointed to take his place. A number of members are trying their skill with the lens, the first to take it out being Mr. Daniel K. Young.

Mr. T. J. Burton, the secretary, has been quite active in urging the society to go into a supplementary exhibition in September at the American Institute Fair. No charge is to be made for space. The committee appointed by the Board of Directors to take charge of it is Mr. H. Mack, T. J. Burton, and Mr. E. Warrin. Mr. H. T. Duffield, a former member and ex-secretary of both the society and of the New York Camera Club, from which he recently resigned, has been lately re-elected a member of the society by the board.

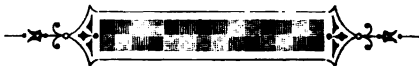
President James H. Stebbins, Jr., is summering in the Thousand Islands.

Mr. E. C. Slater has obtained some good negatives of the Broadway Cable Road in course of construction.

DEATH OF EDWARD J. PARTRIDGE.

BY F. C. BEACH.

We learned by a special notice a month or two ago of the death of Mr. Partridge, whose name has been known all over the Pacific coast by those connected with photography. The following interesting facts about him have been sent to us: "He was one of the enterprising young men who seemed destined to become a part of the progress of the great Northwest, and intimately associated with its growth, though at the time of his death he was at his father's home in San Francisco. For eight months he struggled to regain his failing strength, but Bright's disease had so firm a hold that he rapidly grew weaker till he passed quietly away in the early morning of June 30, 1891. He was born at Wheeling, West Virginia, on May 18, 1856, and was educated at the Massachusetts Institute of Technology, in Boston, being a member of the class in mechanical engineering of 1876. His health failed during his attendance at the Institute, which he entered at 16 years, much younger than the average student, and soon after finishing his course, he was obliged to go to Florida. In 1877 he went to California with his father's family and sought to enter the field of labor for which he was so well adapted naturally and by training, but found his constitution too weak to permit. Always a lover of nature and art, he took up practical photography, which had been the life-work of his father, A. C. Partridge, at that time so well known in Virginia and Boston, and now with his son in San Francisco. In 1883 he went to Portland, Oregon, and opened a studio in partnership with his brother, W. H. Partridge, at present following the same profession in Boston. He became one of the best-known landscape and portrait photographer of the Northwest, his Alaskan views are among the finest made of that region and were the first put upon the market, excepting only those made by W. H. Partridge a year earlier—1886. In 1888 he disposed of his cottage studio in Portland, and spent the year in the house of his brother, Sam C. Partridge, a dealer in photographic goods in San Francisco. With the following year, 1889, he opened a house of his own in Portland, at No. 60 Morrison Street. From his youth until the very last day of his life, he was an indefatigable worker, and that unremitting energy and ambition built up a prosperous business while it consumed the body. His will provided for the continuation of the business, and George H. Weister, who has been with him for five years, and who has had full charge during the eight months' illness of Mr. Partridge, will continue the management as before. The personal worth and dignity of his character won for him many friends whose earnest expressions of regret make it harder to realize that it was best that he should lay down his life so early. Besides his father and two brothers already mentioned, between whom and Mr. Partridge there was an unusual bond of sympathy and oneness of purpose, there are left to miss and mourn him, two sisters, an aunt who has always lived with the family, and a lady to whom he would have been married in April last, had his health allowed.



"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 245.

not be stripped from the glass plate until it is quite dry. If it be stripped before becoming dry, the surface will partake of a matt character, which, for many purposes, is very beautiful. The transfer is made by floating good paper, of any suitable sort, upon a solution of gelatine containing chrome alum. Four ounces of gelatine are placed in a quart of water and allowed to soak for fifteen minutes, then warm the vessel containing it by placing it into a second vessel containing hot water; the gelatine will now become liquefied, and four grains of chrome alum, previously dissolved in a little warm water, are added and well incorporated with the gelatine. This is poured into a flat dish and retained in the liquid state by the application of heat. The paper is coated by floating it upon the gelatine, and a quantity can be prepared at the time.

COLA'S POSITIVE—Lichpan's Process—This process, based upon the use of iron salts, which gives positives from positives and black lines on a white ground. Paper is coated with the following solution, which must be warm: Sulphate of iron, 154 grammes; chloride of iron, 340 minims; gelatine, 154 grains; tartaric acid, 154 grains; distilled water, 77 drachms. An endless roll of paper is put upon a properly arranged system of rollers, and then drawn over the surface of the solution placed underneath in a tray and then hung up to dry. After it is dry it must be kept away from the air. The drawing to be copied must be drawn upon deep black lines upon thin tracing paper, "puns" linen or some other translucent material. It is laid in the printing frame, a piece of sensitive paper, prepared side down, and then laid on the drawing and the exposure made. The greenish yellow color of the prepared paper disappears on exposure to light, and only those parts protected by the black lines of the drawing preserve their color. As soon as the groundwork of the paper has fully lost its color it is immersed in a bath composed of gallic acid, 6 oz., 200 grains; alcohol, 308 grains fluid; afterward mixed with 32 oz. of water. The greenish yellow lines immediately become black by the action of the bath. All that now need be done is to wash the print with clean water, which renders it permanent.

COLLOTYPE, HELIOTYPE, LICHTDRUCK—Is based upon another method of utilizing the action of light upon gelatine rendered sensitive by the admixture of bichromate of potassium. It is, indeed, a development of the Albertype process, differing from the Woodburytype, inasmuch that the gelatine is simply used as a surface in printing. In the heliotype process the gelatine is dissolved in warm water, and a sufficient quantity of bichromate of potash is added to make it

sensitive to light, together with a certain proportion of chrome alum to make it very hard and durable. The solution is poured, while hot, upon a glass plate previously waxed. The film, when dry, is stripped off, and exposed to the light under a reversed negative. Having received the image, the film is made to adhere to a metal plate, the superfluous chemicals are soaked out in water, and the plate bearing the printed surface of gelatine is placed in an ordinary printing press, inked with lithographic ink, and the proofs are pulled on either plain or enameled paper in the usual way, the plate being damped with water after each impression. The greasy ink readily adheres to the deep shadows, which, being hard and insoluble, and non-absorbent, have repelled the water altogether. The high lights, on the contrary, having freely absorbed the water, repel the ink and are left perfectly white, while the parts representing intermediate gradations of tone retain the ink in such degrees as they have repelled the water. This graduated or discriminating power of absorption renders the mechanically printed image a perfect transcript of the negative. The ink used may be either of a photographic tone, in which case the impressions when washed bear a close resemblance to silver prints; or it may be of any color or tint desired to insure a close resemblance to any work of art that is being copied. The effect of an India or other colored tint is obtained by using, instead of clean water for damping the plate, water with a small quantity of some dye in it. This process offers special advantages for book illustrations, and has been adopted with success in many artistic and scientific works of importance.

COLOR, NATURAL, IN PHOTOGRAPHY—Ever since the discovery by Daguerre and Niepce, and especially so since Mr. Scott Archer made known his collodion process upon glass, it has been the dream, desire and aim of the photographer to discover some way by which he might be able to reproduce the image in natural colors as seen by the eye, thus relieving photography from the opprobrium cast upon it, that it was not a truthful representation of the original. From time to time announcements are made that the dreams and aspirations of the photographer have been realized (that the great secret, whereby the representation and reproduction of natural colors has been accomplished, has been laid bare), but all have proved to be delusions promulgated only to deceive the ignorant and unwary. In one of a series of articles published in the *Philadelphia Photographer* in 1888, speaking of this subject, I stated: "It may be that some of the beautiful sub-salts of silver, lately discovered by Mr. Carey Lea, of Philadelphia, will yet play in this way a very important part in the repro-

duction of natural colors." In March of 1890, reports came from Europe that Herr Franz Verescz, of Transylvania, had obtained upon both glass and paper, photographs showing a range of beautiful colors, from the deepest hue of ruby, red and yellow, and from the violet to intense aniline blue. Up to the time of publication green was missing. That the outlines of the pictures are perfectly exact, and that each color stands out from the others with marvelous distinctness, and that the image had not faded after considerable exposure to ordinary daylight. The process is as yet a secret, but enough is known that there is a silver chloride emulsion in collodion or gelatine. Prof. Eder states that "Verescz has most likely, by some professional device, so changed the process described by Carey Lea some ten years ago as to achieve what nobody before him has succeeded in, namely, photographing in several colors which are permanent." This process will of course add greater zest after that which has so long been considered an impossibility. Especially should the supposition of Dr. Liesegang be correct, that the chloride of magnesium may perhaps be successfully used in clearing (fixing) prints in natural colors. In February, 1891, Professor Gabriel Lippmann, of Paris, France, described before the Paris Academy of Sciences his new method of photographing the colors of the solar spectrum, about which much was said in the daily press. His method, as described, consists in backing up what is supposed to be an albumen-coated, silver-sensitized plate—the film side in contact—with mercury. The plate forms one side of a glass cell, separated by rubber strips and clamped together by wire springs. Thus arranged, it is placed in a camera. The light passing directly through from the lens first strikes the glass, then the film, and, by the mercury in contact therewith, is reflected back on itself as if by a mirror. An exposure from half an hour to two hours is required. The plate is then developed (the composition of the developer is not stated) and fixed in a hypo bath. The colors are seen on the film by transmitted light, opposite or complementary to those of the original spectrum, like a negative. The ordinary gelatino-bromide film is too thick and granular. He prefers a thin, uniform collodion film, nearly transparent. The principle of the discovery is supposed to be the interference of the light in the film, similar to the colors observed on a soap bubble, but are retained and developed. By turning the plate at different angles, the colors can be faintly seen by reflected light. It still remains a scientific experiment, and appears to be inapplicable for ordinary use or practice.

COLOR EFFECT IN PHOTOGRAPHY—Up to within a few years difficulties

occurred when colored objects were to be photographed. The highly sensitive bromide of silver emulsion ceases to be effective when artificial colors are to act in relation to their optical brightness, and even the more sensitive iodo-bromide plate does not lead to the desired result with the luminous rays. The modern dry plate requires a peculiar management if with it all colors are to be reproduced in correct value. Gelatine emulsion, under the influence of certain dyes, is not only susceptible to the so-called actinic rays, but even red, yellow and green rays promote dissociation in the light, sensitive bromide of silver. The granules of colored silver bromide assume, with the presence of even extremely small quantities of dye stuff, entirely different properties, which when photographing colored objects are of immense importance. See Orthochromatic Photography.

COLOR IN THE FILM—The color of the film of necessity exercises a great effect upon the printing power of the negative. A yellow colored, yellow stained or mottled appearance are slow printers. Bluish black, brown or greenish black are quick, and the latter especially so, giving crispy prints.

COLORING PHOTOGRAPHS—Either with water colors or other pigments, is an operation that requires much artistic skill and a keen perception of the true value of colors to be used, and to be able to do it effectually will require much practice under a competent instructor. Water colors may be made to adhere to the glossy surface of the albumen print by first applying a weak solution of dried and purified oxgall; or, if but a small surface, the mere touch of the tongue will have the same effect.

COLOR SENSITIVE PLATES—See Orthochromatic.

COLOR SCREEN—A thin pellicle of collodion, colored by a yellow dye, turmeric, etc., either attached to glass, inserted in front, center or rear of the lens. When using color sensitive plates, micro-cover glasses gummed to the stop, and then coated, work admirably. A rabbit should be turned in the stop to allow it to secure the glass and enter the slot.

COMBINATION LENSES—Effective manner of using photographic lenses—Given a wide angle symmetrical of 4 inch focus and another of 6 inch focus, removing the front combination of the 6 inch doublet and replace it by either of the combinations of the 4 inch doublet, a very useful lens of an intermediate focus will be obtained. The slight distortion of the marginal lines is so small that it may be rejected. Similar combinations may be made with other lenses.

COMBINATION PRINTING—A process by which effects are produced which, though not strictly true, are yet more artistic, and the resulting prints very satisfactory. There are two methods employed in this process: First, is to print the subject, and then to utilize the print as a mask, cutting out the outlines carefully with a pair of scissors, and, after a second print has been taken, to place the first and cut out mask over the second print, and place on top of it the cloud or second negative, and again expose to the light till the second negative has printed in sufficiently deep. Another method is to paint over the first print with gamboge, or some other non-actinic paint, and print again under the second negative when dry. But this method is not as satisfactory as the former. See Printing.

COMPARATIVE RAPIDITY OF LENSES—See Rapidity.

COMPOSITION—The combination of the several parts in which each part is presented in its due proportion, thus forming a pleasing and harmonious whole. An important element of success in this is the attainment of the power of selection. Those who are naturally gifted with that kind of taste which enables them at once to perceive those combinations and effects in nature which will make the most agreeable or effective pictures, are indeed fortunate. Yet none need despair of attaining excellence if he does but give his earnest attention to the pursuit of that power of selection. Hundreds of views are constantly being made that are of no account whatever, except it may be portraits of places possessing some interest or association to those who take them. When the object becomes the making of a picture, the producing of a work which from its possessing certain intrinsic qualities giving it a wider field or interest and making it a work of art, more or less, it is extremely necessary that we discriminate between the commonplace and the beautiful in nature. It will not do to take the first view that is presented without examining whether a change of position or, seeking further, some spot may be revealed to us where nature may spread before us some of her unfettered charms. Follow, if possible, the plan of the landscape painter, namely, when you have found a good subject in nature, study it under different effects of light and shadow, noting and comparing each. An hour may improve it immensely, or a month later in the season, when the sun has got further around in his course and higher in the heavens, its charms may be still added to. Especially is this the case in woodland scenes, where a glorious stream of sunlight pouring in upon a mass of rocks, vines or mossy bank, will bring out a foreground that wonderfully enhances the beauty of the picture. The introduction of figures or cattle often

gives interest and completeness to a landscape photograph, but common sense will teach you that they are not suitable to all. They are best adapted to little domestic scenes and charming rural bits, adding additional interest by their appropriateness and the opportunity afforded of getting spots of high light and deep shadow, generally higher and deeper than any in the picture, and giving by contrast the proper relative value to all the other tones. Do not be bound down by the hide-bound rules that some would seek to confine you in, but read, study, and compare with your eyes what you see in nature with what you have read. Especially study Barnett's Art Essays on Composition and Robinson's Pictorial Effect in Photography. Both will give you much pleasure and improvement.

COMPOSITE PHOTOGRAPHY—A succession of photographic impressions, one upon another, on the same plate, so as to produce in a single picture the combined likenesses of various persons. The sitters are arranged, so to speak, upon the sensitive plate. First one is posed before the camera, in direct front or profile view, for such a fraction of the time as would ordinarily be given to one sitter, as may represent the number of persons to be photographed. If three persons are to be represented, and the full time of the exposure would be six seconds, the exposure of the first one of the three would be exactly two seconds. He now steps aside, the second one adjusted *to the headrest*, and, when accurately placed, he in turn gets two seconds, and so with the third. It is said by some that the first sitter impresses all the subsequent ones. If so, cannot this be explained by the destruction of what scientists call the atomic inertia of the unexposed plate.

CONCAVE—Lenses are called concaved when the surfaces are hollowed out, the curve representing that of an arch.

CONCAVE CONCAVO—Concavo-Convex Lens—See Lens.

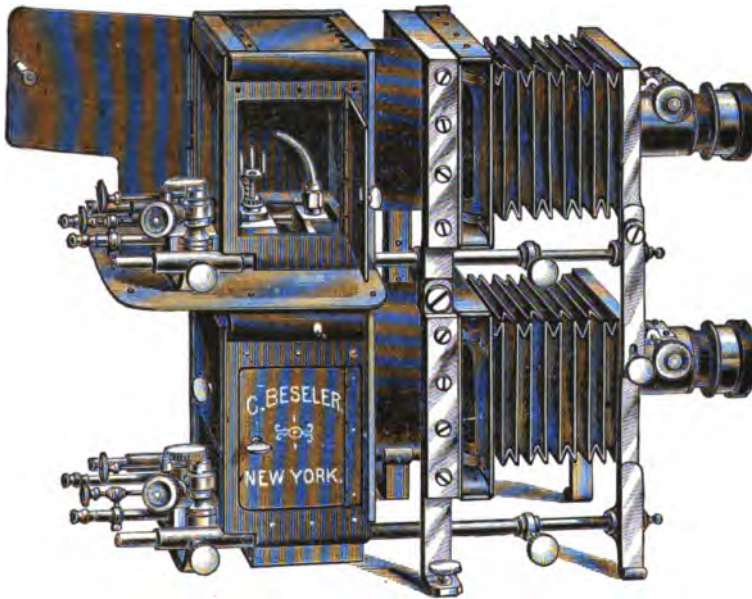
CONDENSER—A lens, or a number of lenses, employed to collect and condense the rays of light and bring them to a focus through a transparent medium upon a solid object which it is desirable to copy or enlarge. The usual form employed for this purpose is that of two plano-convex lenses mounted in a metal cell, with their plane surfaces outside and the convex nearly touching each other. Other forms have three or more elements employed in their construction. The condenser of the late Thomas Grubb, F.R.S., consisted of a piece of plain glass to act as a protector, then a simple plano-convex lens; third, a plano-convex achromatized; and lastly, a combination of very much over-corrected for color, and of slight negative

(To be continued.)

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our reader, to whom timely notice of novelties may be valuable.]

THE TOURIST CAMERA.—In addition to his other specialties, Mr. James H. Markley has lately introduced a small compact hand camera for $3\frac{1}{4} \times 4\frac{1}{4}$ plates, which he names the *Tourist*. It is fitted with a reliable lens, a good shutter, and is very easily managed. Work we have seen made with it is very creditable, and as the price is reasonable the camera should have an extended sale. Mr. Markley is particular that the apparatus he makes shall be of the best character.



THE ECLIPSE STEREOPTICON.—The peculiarity of the new Eclipse Dissolving Stereopticon Lantern is, that it is quite compact, is fitted with devices for adjusting the burner, and has blackened brass sliding light excluding hoods, so constructed at the upper corners that the heat freely escapes. The sliding hoods also enables the condenser to be kept outside of the same, thus preventing unequal heating and the collection of moisture therein, which is one of the ordinary troubles in condensers. The apparatus is fitted with excellent objectives of the Darlot pattern, is handsomely finished, and can be packed compactly in a black leather case, the total weight for the two lanterns not exceeding thirty-five pounds. The bellows extension retains the light and permits of the use of different focused objectives. Another point is the interchangeable flange rings by which different lenses may be quickly applied. We may add that the stereopticon was awarded a medal at the Fourth Annual Exhibition, and was successfully used there in projecting pictures. It is made by Mr. Charles Beseler, of New York, and appears to be a very serviceable machine.

LOSS OF LENSES.—Once in a while the photographic world is stirred up by the robbery of photographic lenses. They are articles so easily taken that it is surprising a greater number of robberies are not reported. The latest comes from Mr. Haworth, of Philadelphia, as follows: *Stolen*.—A number of lenses branded *Service, Franklin, Dolphin* (W. A.) and *Haworth* (W. A.), were stolen from our store July 20th. Photographers are requested to look out for them, and to advise us if they come across any traces of them. JOHN HAWORTH, 641 Arch Street, Philadelphia, Pa.

A NEW VIGNETTE.—One of the simplest devices shown at the Buffalo Convention was a novel vignette for printing frames, invented by J. R. Tewksbury, of Fort Madison, Iowa. It is provided with two slides having scalloped edges, which are readily moved to cut off or enlarge the vignettted opening.

A NEW CONSOLIDATION.—After the publication of three numbers of the *Photo American Review*, the proprietors sell it to the owner of the *Photographic Herald*, Mr. Charles Loeber, with which it is to be consolidated there by transforming it into a trade journal. This consolidation, it is understood, relinquishes the *Review* from being the official organ of the American Photographic Conference and of the Society of Amateur Photographers of New York. The subscription to the *Herald* is \$1; with the AMERICAN AMATEUR PHOTOGRAPHER, \$2.50.

United States Photographic Patents

Issued in July, 1891.

July 14th.

455,954—Apparatus for Coating Photographic Plates with Emulsion; J. H. Smith, Low Fell, Gateshead, England.

456,047—Producing Surprise Pictures; O. Meyer, New York, N. Y.

July 21st.

456, 396—Marking Device for Photographic Negatives; B. A. Blakemore, Staunton, Va.

July 28th.

456,555—Photographer's Retouching and Marking Apparatus; C. Cutter, Minneapolis, Minn.

456,673—Coin Controlled Photograph Apparatus; F. Martin, Newark, N. J.

456,842—Photographic Camera; E. W. Perry, Jr., New York, N. Y.

456,869—Instrument for calculating Photographic Exposures; A. Watkins, Hereford, England.



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Our Illustration.

THIS, the first, in strict order, of the Elaine pictures, represents the first meeting of the ill-fated girl with the man who is, unfortunately, destined to win her affection. Young and inexperienced in the ways of the world she surrenders her heart at once to the stately knight, but still clings instinctively to the old father. The costumes of Lancelot and the Knight of Astolat are copies of genuine English ones, and strictly accurate, as is that of Elaine. The lines intended to be illustrated are as follows :

“ Whence comest thou, my guest, and by what name
Livest between the lips? For by thy state
And presence I might guess thee chief of those,
After the king, who eat in Arthur’s halls. ♦

Then answered Lancelot, the chief of knights:
“ Known am I, and of Arthur’s hall, and known,
What I by mere mischance have brought,
My shield.

But since I go to joust as one unknown
At Camelot for the diamond, ask me not,
Hereafter you shall know me—and the shield,—
I pray you lend me one, if such you have,
Blank, or at least with some device not mine.”

He spoke and ceased; the lily maid Elaine,
Won by the mellow voice before she looked,
Lifted her eyes and read his lineaments.
However marr’d, of more than twice her years,
And bruised and bronzed, she lifted up her eyes
And loved him, with that love which was her doom.

A Word About Chemicals.

BY M. Y. BEACH.

THE dispensing of chemicals for photographic use involves a traffic in poisonous compounds in which the laws governing the sale of dangerous drugs is frequently, though probably unintentionally, violated. The writer has purchased absolute poison in quantities sufficient to destroy human life without even the formality of a label to signify that the contents of the package contained death in drug form. The mere presence of a cautionary label might not deter a careless amateur from the misuse and possibly fatal use of deadly chemicals; yet if labels are required on the part of druggists, it seems as if photographic supply stores should be strictly held to this requirement. Some stores do meet this requirement, but there are many who do not. An instance of carelessness came to the notice of the writer recently in which death might have resulted had not heroic measures been taken for the victim's relief. Liquid poison used in a toning solution without a label was kept in a bottle on a washstand of the hotel room where this amateur photographer was summering. It occupied the place of a frequently used medicine bottle, and a dose of the poison was inadvertently swallowed instead of the medicine. The mistake was detected at once and counteraction taken which prevented serious physical harm. It might have been a terrible ending for this amateur had the circumstances been less favorable for his recuperation.

This is one instance out of perhaps hundreds where photographic chemicals have jeopardized life. When so many instances of fatalities from the misuse of drugs are recorded in the experience of doctors, nurses, and druggists, it behooves those who furnish chemicals to amateur photographers to take all possible pains to surround the poisons they dispense with all the cautions called for by law, and even to go further than legal requirements, inasmuch as young boys with immature judgment often handle and mix solutions as deadly in their nature as are the highest poisons.

Developer and Toning Bath for Bromide Paper.

BY MR. M. V. PORTMAN.

FROM the *Journal of the Photographic Society of India* we extract the following practical process by Mr. Portman. He says: "I give below the process I advise for Eastman's bromide paper. (Workers may, of course, try the ferrous oxalate developer recommended in the instruction with this paper, but I admit that after a considerable experience with it, I have a strong objection to it.)"

DEVELOPER.—A.

Eikonogen,	2 drams.
Sulphite of soda,	4 drams.
Water,	8 ounces.

To be mixed according to the instruction sent with the eikonogen.

B.

Carbonate of soda,	4 drams.
Water,	1½ ounces.

Mix just before use. This amount will develop a 15 x 12 print.

After development and washing in water (not under a tap), place the print in a fixing bath of

Hyposulphite of soda,	10 ounces.
Sulphite of soda,	2 ounces.
Water,	45 ounces.
Sulphuric acid,	110 minims.

Leave the print in this bath for half an hour, then wash, not under a tap, but in a print washer (I always use the Godstone print washer, which answers very well,) for half an hour; then immerse the print for one minute in a tanning bath:

Sulphite of soda,	2½ drams.
Water,	17½ ounces.

Dissolve and add

Tannin,	15 grains.
Hydrochloric acid,	1½ drams.

Wash in a Godstone washer for three hours. If after washing the print is muddy in the high lights immerse it for a short time (sufficient to clear it only) in

Cyanide of potassium,	¼ ounce.
Water,	40 ounces.
Iodine,	1 grain.

Then wash it again thoroughly.

The following toning bath answers well, after fixing, if the print is at all green:

Sulphocyanide of ammonium,	30 grains.
Chloride of gold,	1 grain.
Water,	4 ounces.


Half a minute in this bath will give the print a rich black tone; a longer time will turn the print blue, which answers very well for moonlight effects.

Use fresh developer for each print, and take care, by experiment, that your exposure is correct. Always do your contact printing by a standard artificial light.

The paper should be procured direct from the makers, by post, soldered up in tin, and used as soon after arrival as possible. For enlarging, the day-light enlarging apparatus (camera and easel), sold by the Eastman Co., is excellent.

Women as Photographers.

[Address by Miss Catherine Weed Barnes before the Working Women's Club, at Syracuse, N. Y., August 7, 1891, reported by the *Syracuse Times*.]

N BEING introduced Miss Barnes said: "Wise men shape their course by the signs of the times and those who have studied them closely in recent years cannot fail to have seen that all indications point to this being, prominently, the woman's age. Never before has she had so many paths open to her, and it is becoming plain to all sensible, far-seeing people that these opportunities are increasing as women prove their ability to take advantage of them. That, after all, is the true view to take of women's welfare, to encourage her to do worthy work, and, when she undertakes any which has heretofore been done mainly by men, to expect no privileges on account of sex, while she should expect a fair, open field for competition without restrictions or conditions. She will, of course, make many failures at first and she must accept the inevitable criticism as a man would and not shield herself by excuses for what, in a man, would be condemned. Let her learn by her mistakes. This is a great deal to ask of most women, as their whole education for centuries has been that they must be lifted over the rough places, but the world is gradually adjusting itself to move on a broader gauge road and the whole machinery of life for women must be re-arranged accordingly. It is about time that the ivy and oak fallacy was put out of sight, with those regarding the traditional mother-in-law and old maid. The oak and ivy are so apt to change places and the sap from the one be injected into the veins of the other that the world must learn to see through more carefully corrected glasses.

"After all, the question of fitness for any special work is largely a question of individuality. As one man can do what another cannot, so it is with women. Much actual good would be done by each woman anxious for the advancement of her sex in its practical relations to humanity, if she, in her own proper person, took up some special line of work and studied it so thoroughly that, in judging her results, no one would think to ask if they were accomplished by a man or woman.

"My attention was drawn to this subject by my great and increasing interest in photography, and it has seemed to me that in this work lies a specially fine opportunity for those women who possess the requisite ability. Not that it requires great, or in any way remarkable mental gifts, yet it is all the better if one has such, for they will be revealed in the finished work. But there is, for instance, a class of women reasonably well educated, of much natural refinement, and with more or less artistic taste, who are unable, if suddenly thrown on their own resources, to provide for themselves. They have never learned anything well enough to do it for a living. No woman in this country should feel as if she could not, if necessary, earn a competency. I have known in my own experience women of

good family and high social position thrown on the world, helpless and poor, and when the question of procuring the next meal came up there was nothing they could do but turn to outside help. As a very young girl my highest ambition was to know some work well enough to be paid for it, not through personal interest but intrinsic merit. In this special branch I have tried to prove that women could do good work, and began at the very foot of the ladder, working my way up. To be sure, the top of the ladder keeps rising, but that should be rather encouraging than otherwise.

“This work has strong claims on women’s attention and I will try to give some reasons why I consider it a practical opening for her in the industrial field. While it is best adapted to the class already mentioned, it is in many respects fitted also for others not well educated, perhaps, but who are quick to learn and are willing to work. For this profession, if undertaken by women, should, as far as possible, be mastered in all its infinite details. While it may not be necessary, often, to make practical use of them, one can always better direct others from actual experience, than from volumes of theory. The business woman of ordinary education can learn one or more of them, and it is much more sheltered labor than a great deal so eagerly sought after. You are not obliged to be so constantly on your feet as in a store or factory, there is no noise or confusion about you, and you are sure of steady employment if you do your work well. A good handwriting is needed if one keeps the books of a portrait studio, and women are often employed in this department, as in those of retouching negatives and spotting out prints. Few photographs are delivered without not only the negative being retouched, but the print itself being spotted out, as it is called, before being passed through the burnisher. This last is not difficult to learn, but retouching demands special training to be well done. Many women who sit for their portraits, would be much better satisfied with the results, if some trained modiste had assisted in their toilette, telling them what to avoid and what to wear, besides putting those last touches to drapery or coiffure which add so much to the effect. It would pay in large or, for the matter of that, small studios, to have some such woman regularly employed, and she ought to earn good pay. In the operating room a woman can learn to assist in filling the holders, drawing the focus, posing and arranging sitters, and managing the light. It is sometimes a great physical strain on a woman to move about heavy furniture, backgrounds, or the camera stand, as I can personally testify, and, if I were a professional, I would delegate that part to some one of the masculine persuasion.

“In the developing-room great accuracy of judgment and faithful attention to details is absolutely required. Here is where a knowledge of chemistry is invaluable and where the same care must be given to each negative until it is once in the drying rack, whence it passes to the retoucher and from him to the printer. People are apt to imagine that here special care is not

needed, but only an experienced eye can judge when the right moment has come to stop printing. I speak, of course, only of the usual silver prints or what is generally called a photograph. Professional printers usually coat their silver paper in such quantities as they estimate will be needed for the day's work so as to have the prints clear and bright. This calls for a quick, steady hand, and any one whose fingers are all thumbs will fail of success. The prints pass from the frames to the toning-room where they are transferred from one bath to another until ready for washing, which is a long process. In preparing the paper for printing and in toning, as in developing the negative, a woman must learn to forget personal daintiness. It is by no means clean work, and yet not necessarily dirty, but the chemical stains are difficult to remove and one's hands are so constantly in water that they are apt to look as if they had done a week's washing. Mounting the prints is often done by the women, and burnishing also. This puts the gloss on a picture.

"Many women are natural mechanics, and can use tools as well, if not better than many men, and this is a very useful quality in camera work. Among my photographic appliances is a regular tool chest, used almost as much as my chemical laboratory. To better utilize the latter, I shall this winter begin a course of chemical study under regular instruction. I will show this evening an ordinary camera, lens, and shutter and explain the manner of using them. The trouble with most instructions is that too much is taken for granted, while explanations should be made very simple and in camera work, especially, there is great general want of information. If people realized all there is to the art, its almost boundless scope, and its value as an educational force in the world, it would begin to have the respect it deserves. Men usually go into it, as into the grocery, hardware, or similar business, simply as a means of making money and, while that object is a worthy one, there should be something more to raise and keep it where it belongs—among the arts and sciences. It will bear all the honor you can give it.

"In one of the large photographic establishments of London, every department, from top to bottom, is worked by women, and there are several in America owned and managed by women, who have, in some cases, men to do the heavy work, but who themselves pose the sitters and make the exposures. One woman is said to earn several thousand dollars a year, and I often receive letters from women professionals, requesting information and advice. Some women amateurs could make a handsome income by becoming professionals. Those who do not care to undertake the management of a studio could, as does a lady in Brooklyn, teach amateurs and make a living by it. The professional army is largely recruited from the ranks of the amateurs. One must, however, learn not only to bear criticism, but to expect and profit by it. A professional once told me, 'You have worked hard on this picture, and you want to make yourself believe it is good but I will

not let you, for you know that you can do better.' It is in woman's power now to obtain credit and reward for good work, but she must earn it by the sweat of her brow. Let her despise credit which is given her only because she is a woman, as parents reward a bright child, and not because she has faithfully and conscientiously labored to gain praiseworthy results."

Sliding Rails for Copying and Other Cameras.

THESE sliding rails are intended to carry cameras when being used for copying or enlarging. They are a great improvement on the primitive slips of wood nailed at each side of a flat board which has hitherto been used, and which allowed the apparatus to wriggle about from side to side or wedge itself at one end as the wood dried up irregularly. The idea is an adaptation of that seen in the planing machine, but we do not think it has been hitherto suggested or introduced in photographic apparatus.

The arrangement consists of two slips of hard wood Δ shaped, which are simply laid—parallel to each other—on a table, and bed themselves by the weight which is placed on them. Two other pieces of wood are planed to the same bevel as the slips already mentioned. These are joined together and screwed to the bottom of the camera or to a board on which the camera is placed, and clip the slips along which they are intended to move.

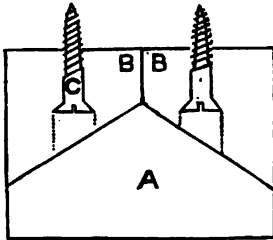


FIG 1.

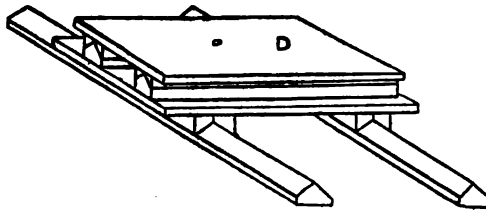


FIG 2.

Fig. 1 is a section, showing the lines, A, and the guiding pieces, B B. The screws are sunk into the beveled pieces, so that the heads will not cause friction, as shown in C. The strength of wood to be used depends upon the size of the instrument it is to carry, but the size given in section would be sufficient for half and whole plate cameras. The base lines need not be more than a yard long, as being laid loose on the table, they can be moved to any position.

Fig. 2 shows how another set of lines and guiders may be fixed at a right angle to the lower set, so that the camera may be run sideways as well as backwards and forwards, and thereby allow the apparatus to be adjusted without moving the paper, or whatever may be fixed for treatment opposite

the camera. A little powdered black-lead on the bevels will ease the working considerably.

This construction described allows any heavy camera to be moved very smoothly and easily, backwards or forwards.—*The Photographic Record*.

Improvements in the Kallotype Printing Process.

DR. W. W. J. NICHOL, of Birmingham, England, has made an improvement over his patented process of 1889 by combining with the ferric oxalate nitrate of silver and soda, which is used as the sensitizer. The proportions are not given (we hope to ascertain them later). Paper thus prepared is called No. 2 by Dr. Nichol. *The Photographic Record* gives the following hints about working it: "One of the most important points to be observed in working the process is to see that the paper is kept dry, and this applies both to the method of keeping it in stock and when in the printing frame. The presence of damp affects the color, so that it may be sometimes necessary, especially in the winter months, to dry the paper carefully before printing, but if too much heat is used in drying, it will result in fog. The pads at the back of the frame should be thoroughly dried. The exposure is made in daylight, after the manner of silver paper, except that the time required is much shorter. An average exposure is from five to ten minutes in a good diffused light, or from two to three minutes in sunlight. The image is seen in faint tones somewhat as those produced in platinotype printing, and is complete when all but the minutest details can be seen. A little experience will soon give the correct depth. A number of prints may be developed at the same time, but they must not be allowed to stick together. Draw each print through the solution to remove air bubbles and ensure equal saturation. Then take the bottom print out by the edge, and place it upon the top, and in like manner go through the lot. As the prints are seen to be developed fully, and when the yellow color of the paper has gone, they can be removed to the fixing bath. Usually the development is complete in about five minutes, but it must be continued until the yellow color on the surface is removed, although it will sometimes take from fifteen to twenty minutes, because it does not entirely disappear in the fixing bath. The developing solutions in which the prints are immersed are as follows:

No. 1.—BLACK TONES.

Rochelle salt, 1 ounce.
 Borax, 1 ounce.
 Water, 10 ounces.
 Solution of bichromate of potash (20 grs. to oz.), 10 to 12 minims.

No. 2.—PURPLE TONES.

Rochelle salt, 1 ounce.
 Borax, 2 drams to $\frac{1}{2}$ ounce.
 Water, 10 ounces.
 Solution of bichromate of potash (20 grs. to oz.) 10 to 12 minims.

No. 3.—SEPIA TONES.

Rochelle salt,	½ ounce.
Borax,	1 dram.
Strong hydrochloric acid,	5 drops.
Water,	10 ounces.
Solution of bichromate of potash (20 grs. to oz.),	10 minims.

“The prints for this bath must be rather deeper than for No. 1 and No. 2, and a drop or two more hydrochloric acid must be added occasionally as needed.

“If greater contrast is desired, the addition of one drop of a twenty-grain solution of bichromate of potash may be made to each ten ounces of developer, and more if necessary. Too much bichromate will destroy the half tone. Development must be conducted in a subdued light, and if the developing solution is kept carefully from the light, it will serve to develop a great number of prints. When there begins to be the least indication of want of brilliancy in the prints, the developer must be thrown away and a fresh one substituted. This is not at all extravagant as the developer is very cheap. When the prints have reached the color and depths desired, they are fixed by immersing for ten or fifteen minutes in fixing bath—

Strong ammonia	2 drams.
Water,	1 quart.

“To ensure perfect fixation, particularly when any considerable quantity of prints are being treated, it will be best to pass them through a second ammonia fixing bath, made in the same way as above, allowing them to remain for ten or fifteen minutes, moving frequently. After washing in several changes of running water for about a quarter of an hour, the prints may be dried between the leaves of a blotting book and are ready for mounting.”

In the *British Journal of Photography* Dr. Nichol says: “Kallotype No. 2 is applicable to albumenized paper. This, I believe, is an entirely new departure in iron printing, and such a paper will soon be on the market. It is treated the same as ordinary plain paper, but if anything, is more sensitive. I may add that I have not yet attained my ideal paper by this process, which is one that prints out in the frame and requires washing in diluted ammonia. I have nearly reached it, however, and hope soon to perfect it.”

This comes very close to the Pizzighelli printing-out platinotype paper, which simply required washing in acidulated water to fix the images. We shall report the progress made as early as possible. One advantage of the improved paper is that the soiling of the fingers with the nitrate of silver solution is avoided, making the developing out of the image and the fixing much easier.

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CATHERINE WEED BARNES.

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EDITORIAL COMMENT.

Editorial Courtesies.—We desire to extend to the Executive Committee of the Photographers' Association of America, and to our esteemed contemporary, the *St. Louis and Canadian Photographer*, our hearty thanks for courtesies shown the representative of this magazine at the recent Buffalo Convention. President Hastings personally assigned the magazine a table and a good position, and Mr. and Mrs. Clark, of the publication above named, gave valuable assistance which was fully appreciated. Such kindness shows the comradeship which can and should exist between those interested in similar pursuits. Bread cast on the waters has been known to return in the shape of an extra large loaf, as we hope to prove some day, and the line between professional and amateur should be, like the equator, an imaginary one, while the sooner this idea becomes a recognized fact, the better it will be for all concerned.

Our Change of Office.—There having been some confusion and complaint arising from our having two offices, in two different cities, it has been thought advisable to concentrate in New York. Hereafter we invite our

friends to address subscriptions, communications, and papers for the magazine to the AMERICAN AMATEUR PHOTOGRAPHER, 361 Broadway, New York, which will be our only office. Copies of the magazine may be had from the leading dealers in photographic materials in the large cities throughout the country. It is also our intention to have it kept on file in many of the public libraries.

Our Clubbing List.—Valuable additions are being made to our clubbing list, which offers many advantages to those desiring to have some first-class publication along with the AMERICAN AMATEUR. We have lately added to the list *Frank Leslie's Illustrated Weekly*, the only popular illustrated paper that has specially interested itself in amateur photography, by frequently reproducing pictures made by amateurs, contributed to what it calls its photographic prize contest. It is doing more than any similar publication in showing amateurs what their co-laborers are producing, and thereby becomes a valuable medium for the camerist to possess.

Another publication is *The American Magazine of History*, edited by Mrs. Martha J. Lamb, which has the merit of giving interesting details of the growing history of our nation, in a pungent, graphic style that is most pleasing and entertaining. The magazine is handsomely printed and well worth the subscription.

Prompt attention will be given to orders for the several publications, but allowance must be made for the necessary delay in transmitting the orders to the different publishers. Club subscribers should notify us of any unusual delay.

Bicycle Camerists.—It has been a matter of surprise to us that so few excursions for pleasure and photography are taken by the many clubs throughout the country. Possibly it is because of the bother the carrying of the apparatus incurs, but this is made so compact and light at the present time that it really does not become a sufficient reason. The thousands of bicycle clubs seem to supply a way of popularizing photography that perhaps has not been thought of. It should be possible to organize a photographic branch or section in a bicycle club, that is, a number of men or women who enjoy photography as much as a pastime as they do riding. Let them be equipped with a small magazine $3\frac{1}{4} \times 4\frac{1}{4}$ hand camera, fitted to rest securely on some portion of the bicycle. Frequently in their long rides they take rests; then the camera becomes useful, since the scenery they see can be recorded in the photograph, as well as many novel and interesting incidents. At the end of the season lantern slides can be made from these negatives and the club as a whole be entertained during the winter months by exhibitions. The collection of views can also be put into albums for reference as to what may be seen in different parts of the country. We believe Mr. Stevens of bicycle fame utilized the Hawkeye hand camera in this way on his trip around the world. Special clips or devices are made to hold cameras on

a bicycle when the latter is to be used as a tripod for viewing. We know of an Englishman who has fitted on to the rear of his tricycle a box arranged to carry his quarter plate camera and a dozen or more plate-holders, enabling him to stop and take views along the road at his leisure. Bicycle riding has become so popular that there should be no trouble in the many clubs to find enough camerists to make quite respectable photographic sections or departments. In such club houses dark-rooms for the development of plates could be as easily supplied as lockers, bath-rooms, etc., and would add an attractive feature to the club's equipment. The bicycle is a very convenient vehicle for carrying a small camera, and there is no reason why more photographic work should not be done with its aid. We commend the idea to bicycle clubs and shall be pleased to record the formation of any new organization.

Orthochromatic Photography.—At the Buffalo Convention of the National Photographers' Association, orthochromatic photography appeared to excite more interest than any other subject. It is likely to be enlarged upon and improved in the future so that orthochromatic plates will be used more extensively than any other kind. Some of the improvements so far made have been the making of such plates extremely rapid, which enables them to be employed with good advantage in hand cameras. The retarding effect on the blueness of the distant atmosphere or mountains is one of the points noticed in these plates, which, instead of being blank, reveals the distance much more perfectly. Clouds are also more naturally rendered, and autumn foliage is brought out to better advantage. It is encouraging to see so many of our manufacturers striving to supply reliable orthochromatic plates. There is no question as to their utility, as was set forth by Mr. Cramer in his paper at the convention.

Exhibits at the Convention.—While the exhibits of photographs at Buffalo were not as numerous as at the Washington Convention, they were in many respects fully equal in quality, and were hung to much better advantage. The committee secured a separate building, not far from the main building, provided with a top skylight, and thus gave each exhibitor's exhibit an equal chance as to lighting. We are glad to note progress in this direction, since heretofore the exhibits, in several conventions, have been hung without much reference to their proper lighting. It was a very sensible movement to amend the constitution for biennial sessions, and no doubt the Chicago Convention in 1893 will be the largest and most successful ever held, since there will be so much to see. Another good movement is the proposition to provide a special building at the World's Fair for photography as an art or science, by itself. We believe Mr. C. Gentile, of the *Photographic Eye*, is endeavoring to engineer such a movement with the Fair directors and we hope he will succeed. Photography is interwoven with so many industries

that it may be a difficult thing to carry out the idea of having every branch with which it is an important factor illustrated under one roof.

The Chicago Photographic Associations' Opportunity.—The Columbian Exhibition of 1893 at Chicago is assuming such immense proportions that it will afford an excellent opportunity for the amateur clubs especially to keep a photographic record, at least, of the progress of the preparations, which it would not pay a professional photographer to do. Aside from this, though the official photographer appointed by the Board of Directors is not a Chicago man, there are sure to arise many incidents of interest which would escape his attention but which would be of special interest, historically, to the amateur and resident Chicagoan. We hope the Chicago Camera Club will look after this subject and make a record which will be more complete than any officially gotten up. Then there is the Chicago Lantern Slide Club. In 1892 it should have no trouble in preparing a set of slides illustrating every step of the preparation of the grounds and buildings of the Fair.

Still Another New Developer.—Improvements in developers still continue. It is two years since eikonogen was put on the market. Now comes a developer which is said to eclipse that both in name and developing power, three dozen plates being developed in one small quantity of solution. It is called the "paramidophenol developer," and is used with soda or potash as an alkali. When soda is used it is mixed as follows:

Water,	1,000 c. c.
Sodium sulphite,	80 grammes.
Sodium carbonate,	40 grammes.
Paramidophenol,	4 grammes.

This is said to yield very delicate negatives. When potash is used the following proportions are to be observed:

Water,	1,000 c. c.
Sodium sulphite,	120 grammes.
Potassium carbonate,	40 grammes.
Paramidophenol,	4 grammes.

This is equally good for negatives of a general character and positives on glass or paper. Should it become popular it is likely to be called the "para" developer, as "eiko" is for eikonogen.

We have not yet had an opportunity of testing this developer in comparison with others, as it has not yet been put on the market, but it is a subject worth experimenting with by chemists and photographic societies.



New Emulsion for Printing-Out Paper.*

By W. K. BURTON,

Of Imperial University at Japan.

IN THE first place, there are emulsions that need no washing, and that are made by the extremely simple process of pouring one liquid into or mixing one liquid with another. The emulsions are, moreover, ready for use at once, and being liquid at ordinary temperatures can be applied to paper or other materials either by floating, as in the common method of sensitizing albumenized paper, or by brushing them over the material that it is wished to sensitize. Farther than this, no gloss is given to the surface of the paper. I think, indeed, that by this process the preparation of sensitized paper—of any kind, so far as surface is concerned—is reduced to the utmost possible simplicity.

I have tried a number of variations in the quantities of chemicals, and have had more or less success with all. In fact there is great elasticity in the proportions that may be used, and I believe that almost any formula for a printing-out gelatino-chloride emulsion might be taken, and that good results could be got, if one or two considerations were not lost sight of. The first is that the quantity of gelatine must be kept so low that it will not cause a gloss on the paper, or cause the emulsion to set at ordinary temperatures. The second is that the formula must insure a large quantity of insoluble silver salt in suspension. The reason for this is that the coating got by an emulsion that does not gelatinize immediately after coating is much thinner than if it does gelatinize.

To those who have not had much experience in emulsion work, it may be worthy of remark that, within very wide limits, the same quantity of an insoluble silver salt is emulsifiable in a given quantity of water, whether the quantity of gelatine used as a menstruum be great or small. Roughly speaking, the haloids, or, I imagine, the other insoluble or nearly insoluble salts of silver, resulting from the decomposition of one ounce of silver nitrate, can be emulsified in ten ounces of water; but, if that quantity of silver be exceeded, a part will not emulsify, but will be thrown down in the granular form, in which it is useless for sensitizing any surface. The proportions vary, however, with certain conditions, such as alkalinity or acidity of the solutions.

The difference between the failure of a silver haloid to emulsify in a gelatinous solution and the precipitation of it from that solution afterward must not be lost sight of. Thus, if any of the emulsions that I am now writing of be kept for a number of days at a highish temperature—such as that of pretty hot weather—it is likely that a good deal of the insoluble silver salt will be found at the bottom of the vessel holding the emulsion;

* A communication to the Camera Club, and printed in its journal.

but this silver salt is not in the granular state, and can be re-emulsified by heating the mixture to about 120° Fahrenheit, and shaking well, the more easily if a little more gelatine be added.

I select three formulæ as follows :

No. 1.

A.—Nitrate of silver,	400 grains.
Water,	4 ounces.
B.—Gelatine (soft),	80 grains.
Chloride of ammonium,	80 "
Citric acid,	120 "
Water,	8 ounces.

No. 2.

A.—Nitrate of silver,	400 grains.
Water,	4 ounces.
B.—Gelatine (soft),	80 grains.
Chloride of ammonium,	80 "
Citric acid,	120 "
Carbonate of soda (dry),	45 "
Water,	8 ounces.

No. 3.

A.—Nitrate of silver,	400 grains.
Water,	4 ounces.
B.—Gelatine (soft),	80 grains.
Chloride of ammonium,	80 "
Citric acid,	60 "
Carbonate of soda (dry),	80 "
Water,	8 ounces.

In my hands the first formula gives an emulsion suitable for preparing paper to be used for printing from dense negatives, the second from medium negatives, and the third from thin negatives.

The third formula is, I am afraid, dreadfully unorthodox. Unless I have made a mistake in my chemistry—which is highly probable—there is just about enough of ammonium chloride and of sodium citrate formed by the double decomposition of the citric acid, and of part of the soda, to decompose the whole of the nitrate of silver. I do not know whether, in this case, there will be carbonate of silver formed; but, if not, there remains a large excess of carbonate of soda. All I can say is that the formula works all right, and that the paper that results from the use of it keeps very fairly. The paper resulting from either of the other formulas will, I have no doubt, keep as long as any ready sensitized paper. I have already kept some nearly a month, and it is still quite white.

The following is the method of emulsifying: The two solutions are heated to a temperature of 110 to 120° Fahrenheit. The temperature should not be greater than 120°, as there is a great chance that some of the insoluble silver salts produced will be thrown down in the granular form. A is then added slowly to B with much stirring. The emulsion is filtered through a double thickness of cambric, and is then immediately ready for use. If it

is wished to keep the emulsion for any length of time, ten per cent. of alcohol, in each ounce of which a few grains of thymol have been dissolved, should be added to the emulsion. It is to be observed, however, that, even with this addition, emulsion by formula No. 3 will not keep for very long.

The best way of coating is certainly by floating, allowing three to four minutes, but the quantity of emulsion needed is considerable. It is possible to get an even coating by brushing with cotton wool in the following way: The paper is laid on a sheet of glass or a clean board, and is thoroughly and evenly damped with the solution by brushing over the surface several times in directions at right angles. It is put on one side for ten minutes or a quarter of an hour to get surface dry, when the operation is repeated. By working in this way it is possible to do with a very small quantity of solution emulsion, and it is possible to use what there is to the last drop, but the quantity used will be found to be more per sheet than in the case of floating. The reason, I imagine, is that it is impossible to get an absolutely even coating by brushing, and that it is therefore necessary to make the coating so thick that there will be sufficient silver where it is at its thinnest. I have never been able to get an even enough coating by brushing only once.

The temperature of the operating room should be not below about 70° Fahrenheit, or else the emulsion should be warmed.

The paper is best dried pretty quickly before a fire, or near a stove, after it has lain face upward for about four or five minutes to get surface dry. In fact, the paper is best treated, in the matter of drying, like paper that has been coated with the solutions for the "hot bath" platinotype process.

It will be found that it is possible to coat about eight sheets of "medium" sized paper (22 x 17, the orthodox photographic size) with the quantity of emulsion given above by brushing, or ten to twelve sheets with a consumption of the like quantity by floating. It will thus be seen that the process is an economical one.

The color in the printing frames should be a rich brown with either of the first two formulas, a deep purple with the third.

The printing is very quick, whichever of the formulas be used, but with No. 3 it is extraordinarily so. Indeed, paper coated with emulsion prepared by this formula is, I think, more sensitive than that by any other printing-out process that I know of. It is so sensitive that it is quite necessary to take extra precautions in working it. It needs at least all the care that platinotype paper needs, although there is, of course, the difference that, in the case of the silver paper, the result of the action of feeble light is seen at once; in the case of the platinotype paper it is not seen till the time of development. I consider it best to do everything in the way of preparation by gas or lamp light.

Toning may be either by gold or platinum. I prefer Clark's platinum process to any other. I add, however, a good dose of salt to the solution,

and put the prints into it dry—that is, at least, when using either of the first two formulæ. When using the third, the prints are washed in a weak solution of citric acid before they go to the toning bath, to neutralize the alkalinity.

If a platinotype toning bath that has been used for some time, and that has been repeatedly strengthened with chloro-platinite of potassium, be used, a color is got that some people dignify with the appellation “sepia tint,” but I incline to call it a dirty brown.

I find that the emulsion is readily applicable to wood, and I hope to get good results when I have had some panels made of one or other of the beautiful white woods, with a fiber like silk, that are peculiar to this country.

Restrictions on the Importation of Photographs.

BY F. C. BEACH.

CONSIDERABLE comment has been made in the daily journals on a new order issued by the Treasury Department at Washington in regard to a different interpretation given to the law of 1879, providing for the importation of dutiable articles through the mails from foreign countries than was formerly given. Heretofore photographs sent from foreign countries by mail were permitted to be received in successive lots to one addressee on payment of the duty at the post-office. Now, more than one importation is not allowed and cannot be made without securing relief from the Treasury Department at Washington. In the case of the first importation the photographs are seized, examined, and then released on payment of a fine equivalent to the duty. The addressee is notified by the post-office. When the addressee resides out of a customs port then the package is forwarded to his post-office and duty collected there. The duty on imported photographs is 25 per cent. of the value.

All of this commotion has been brought about by lottery tickets, which, being classed as printed matter, are dutiable under the tariff of 1890. The broad term, “printed matter,” is made to cover photographs. To aid the seizure of lottery tickets the discovery is made, under Article 11, Section 2, of the Universal Postal Union Convention, at Lisbon, Spain, March 21, 1885, that “any packets whatever, containing articles liable to custom duties,” are forbidden being sent by mail. We applied to the Post-Office Department for the full text of Section 2, Article 11, and received the following reply:

POST-OFFICE DEPARTMENT.—OFFICE OF FOREIGN MAILS.

WASHINGTON, D. C., September 1st, 1891.

Sir,—In compliance with your request contained in your letter of the 31st ultimo, and made in consequence of the seizure by customs officials of the Treasury Department of photographs as printed matter sent in the mails to United States citizens from foreign

countries; I quote the official text of paragraph 2, Article 11 of the Universal Postal Union Convention of Lisbon, with the introductory clause, as follows: "It is forbidden to the public to send by mail: . . . Second.—Any packets whatever containing articles liable to customs duties." I am, very respectfully,

Your obedient servant,

N. M. BROOKS,

Superintendent of Foreign Mail.

F. C. BEACH, Esq., No. 361 Broadway, New York, N. Y.

We learn, however, from the New York custom authorities, that this prohibition only applies to a second importation by an addressee, and as it is difficult to tell whether the sender is the same person in each case it virtually amounts to nothing.

We herewith give copies of official circulars on the subject, asking our readers to bear in mind that, while the word "photograph" is not mentioned, whatever relates to "printed matter" also applies to photographs.

The first circular, dated June 27, 1891, was sent to the collector of customs at St. Paul, Minn., as given below:

RELEASE OF PROHIBITED IMPORTATIONS.

1891
Department No. 97,
Division of Customs.

TREASURY DEPARTMENT, Office of the Secretary,
WASHINGTON, D. C., June 27, 1891.

To Collectors and other Officers of the Customs:

Many instances of non-compliance with some of the provisions of the Department's circular of January 29, 1887, relating to released prohibited importations, having come to the notice of the Department, the circular is re-published as follows, and a strict compliance with its provisions enjoined, viz.: "Hereafter, goods forfeited under the stipulations of Postal Treaties in consequence of importations by mail, and goods forfeited in violation of Sections 2804 and 2502 of the Revised Statutes (as reproduced in Act of March 3, 1883, Statutes at Large, Vol. 22, page 505), may be released by Collectors of Customs upon payment of fine equivalent to the duty when the importation, in the judgment of the Collector, was not in willful violation of law, and the amount of duties does not exceed *twenty-five dollars*. But no such release shall be made to any person who has previously violated the provisions of the above-cited laws and treaty stipulations by an importation thus prohibited.

"Collectors will report such releases weekly to the Department for approval, specifying the goods released, their value, and the statute violated, with the name of the person to whom the release shall have been made. But such report will not supercede the weekly or monthly reports of seizures now made to this office or any other bureau of the Department."

Collectors of Customs, and the chief officers of the customs acting as Collectors, will make the above-required reports.

CHARLES FOSTER, *Secretary.*

Following this we give a circular on canceled postage stamps, which carries out the policy outlined in the previous circular:

U. S. TREASURY.

WASHINGTON, D. C., July 13, 1891.

To Collectors and other Officers of the Customs:

In view of the diversity of practice at the different ports as to the valuation of certain canceled and uncanceled postage stamps, the following instructions are issued, viz.: canceled and uncanceled postage stamps, being dutiable articles, are prohibited from importation through the mails, and when so imported will be seized by custom officers.

In cases where the duties do not amount to 10 cents the stamps may be released free of duty. Where the duties amount to more than 10 cents they may be released on payment of a fine equal to the duty.

O. L. SPAULDING,
Assistant Secretary.

The next circular relates more particularly to printed matter and its application to photographs :

U. S. TREASURY.

WASHINGTON, D. C., July 21, 1891.

To Collectors and other Officers of the Customs :

Lottery tickets, being subject to duty as printed matter under the provisions therefor in paragraph 423, Act of October 1, 1890, the importation thereof by mail is prohibited by Article 11 of the Universal Postal Union Convention, which forbids the sending by mail of "any packets whatever, containing articles liable to custom duties."

Such tickets and the printed advertisements, etc., which usually accompany them are therefore liable to seizure and forfeiture as prohibited importations, and are hereby excepted from the provisions of the Department's circular of January 29, 1887 (Synopsis 8014), re-published in Circular No. 97, dated the 27th ultimo, which authorizes the release of prohibited importation by collectors of customs, upon payment of a fine equivalent to the duty, when the importation, in the judgment of the collector, was not in willful violation of the law, and the amount of duty does not exceed \$25.

Lottery tickets and printed advertisements relating to lotteries should be held and treated as forfeited goods. The Post-Office Department has issued instructions for the delivery to custom officers of lottery tickets found in the foreign mails.

O. L. SPAULDING,
Assistant Secretary.

There being some countries not in the Postal Union, with which special treaties have been made, the next circular notes the exceptions :

U. S. TREASURY.

WASHINGTON, D. C., July 29, 1891.

To Collectors and other Officers of the Customs :

In enforcing the provision of Circular No. 106, of July 13, 1891, relative to the treatment of dutiable printed matter imported in the mails, custom officers should bear in mind the exceptions to such provisions, which are embraced in the special packet-post treaties now in force between the United States and certain other countries. These treaties have successively been promulgated in Department instructions, and will be found embraced in the following synopses: Canada, synopsis 8726; Mexico, synopsis 8977; Barbadoes, synopsis 8641; Honduras, synopsis 1879; Salvador, synopsis 9463; Hawaii, synopsis 9270; Leeward Islands, synopsis 9368; Columbia, synopsis 9442; Jamaica, synopsis 8512.

O. L. SPAULDING,
Assistant Secretary.

With a view of obtaining information on the subject from the Post-Office Department we addressed a letter to the First Assistant Postmaster General, setting forth the injustice of seizing photographs without notice to the public, and that it was understood to be done in consequence of instructions given by the late Postal Convention. We herewith reproduce the reply :

POST-OFFICE DEPARTMENT.—OFFICE OF FOREIGN MAILS.

WASHINGTON, D. C., August 27, 1891.

F. C. Beach, Editor American Amateur Photographer, 361 Broadway, New York :

Sir,—I have to acknowledge the receipt of your letter of the 22d instant, addressed to the First Assistant Postmaster General, in which you state that you have learned that the

Treasury Department has issued an order virtually confiscating photographs and other printed matter, except books, coming to citizens of the United States from foreign countries in the Postal Union, and that you wish to ascertain whether you can obtain a copy of the Postal Convention instruction which, you appear to understand, resulted from the deliberations of the late Postal Convention (at Vienna), and a copy also of the Treasury Department's letter of August 12th bearing on the subject.

In reply, I have to inform you that no change was considered or made by the recent Vienna Congress in the regulations governing the transmission of printed matter, which includes photographs, in the Postal Union mails, and that consequently there is no such "instruction" as you refer to.

The annoyance to yourself and your subscribers which, you apprehend, may result from the enforcement of the recent orders of the Treasury Department to its officials in regard to their treatment of dutiable matter in the mails, it is hoped, will soon be prevented by a restoration of the understanding previously held by the Treasury and Post-Office Departments in regard to the execution of the "Regulation governing the treatment of dutiable articles received in the mails from foreign countries," mutually agreed upon by both, concerning which correspondence is now in progress between the Secretary of the Treasury and the Postmaster General.

Application to the Treasury Department will doubtless procure for you a copy of its letter of August 12th to which you allude. I am, very respectfully,

Your obedient servant,

N. M. BROOKS,

Superintendent of Foreign Mails.

It will be seen from the foregoing that there is a prospect of having the unfavorable interpretation of the law changed for the better.

The Fixing Bath.

By E. J. WALL.

THE directions given in the books for compounding this are very simple: "Dissolve an ounce of hypo in four of water," and it is done. Doubtless this will do the fixing most effectually; it cannot be improved upon for this single purpose. But how quickly does it become discolored, especially if pyrogallol be the developing medium, in which condition it is very apt to cause stains upon the negative, unless great care is exercised? And how frequently does the gelatine film frill, or become soft around the edges, breaking off in places, and thus necessitating the employment of the alum bath, an abomination to be avoided if possible. Can these difficulties be avoided? Very readily, by using an acid fixing bath, made as follows:

Sodium hypo-sulphite,	4 ounces.
Sodium bi-sulphite,	1 ounce.
Water,	16 ounces.

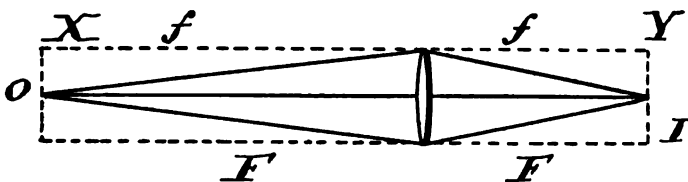
Here we have an absolutely perfect fixing bath. It will remain "water white"; it will not discolor bromide paper, or stain either plates or films, and it will prevent blistering with the one and frilling with the others. Finally, this bath, with the occasional addition of a little hypo and water, to supply the loss of evaporations, and a dash of the solution bi-sulphite, every time it is used, will last almost indefinitely. Try it once, and you will never use anything else.

"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 332.

power although the externals are plane. Other combinations have been from time to time proposed. It is important that all the lenses should be made of glass as free from color as possible, and especially in that next to the negative, and it must also be free from air bubbles and striæ.

CONDENSER—A substitute for—It is said that a simple and inexpensive condenser can be made as follows: A concave glass of about thirteen inches diameter, such as used for clock dials; to this fit a sheet of clear glass by properly cutting it; join the two together with opticians' cement and a few brass clips, leaving a small hole in the top for filling, and at which form a small funnel with the cement. Then fill carefully with pure glycerine, thus producing a plano-convex lens of about thirty inches focus, two of which make a fair condenser at a slight cost.

CONJUGATE FOCUS—The distance between a point in an object and the lens and the distance between the lens and the image of that point are said to be conjugate foci of the lens. They are of much importance in enlarging or reducing a negative print or engraving. The law of conjugate foci is one of the few simple laws that occur in the subject of optics. Its main application is, with a given lens to determine distances on either side of its optical center for position of object and image, for enlargement or reduction. The first and essential measurement necessary is the absolute focal length of the lens. This being known, the interpretations of the law are quickly understood. The square of the focus for a given lens is a constant, and the distance beyond the focus for parallel rays on one side multiplied by the distance beyond the focus for parallel rays on the



other side is also constant. Again, whatever proportion of the focus Y be, X will be that number of times of the focus. If we have a 10 seconds lens, the square of its focus = 100 seconds; if $Y = 5$ seconds, X must = 20 seconds. In other words, if Y being half the focus, X will be twice the focus, or generally, if $Y = \frac{1}{n}$ the focus, $X = n$ times the focus. Again, the same figures represent the proportions for the sizes of the image and object, and as the positions of the conjugate points O and I are always interchangeable, the distances

found for the case of reduction are identical with those for a case of enlargement, but reversed, as regards their positions, from the optical center of the lens. Putting the law in this simple form, one sees the reason for the rule of thumb containing the expression plus 1, viz., for a given reduction with any lens the distance of the object from the lens is the number of times, plus 1, multiplied by the focal length of the lens; and the distance of the screen from lens is the reciprocal of the number of times, plus 1, multiplied by the focal length of the lens, and *vice versa*, for given enlargements. See table of enlargements.

CONSTANTS IN OBJECTIVES—It is claimed by some that all lenses have a fixed or constant focus for objects at a certain distance and all beyond. This claim is especially made for lenses used in hand cameras. Others claim that there is no such thing as a constant focus for any lens; that the plane of absolute sharpness varies for any point at which the object may be, between an infinitely distant point and the lens. No one will deny that there is a plane of absolute sharpness in all well corrected lenses, and the determination of that plane depends upon the extent to which the image on the ground glass is magnified. The latter claim seems to be proved by magnifying largely one of these little negatives produced by the fixed focus hand camera, and very unsatisfactory pictures are produced, because they enlarge the error of focus which the eye was not able to discover in the original.

CONTACT, OPTICAL—Is said to be produced when two substances are mechanically brought into absolute union, and present two surfaces instead of four.

CONTRAST—The opposition of varied forms, colors, etc., which by such juxtaposition more vividly express each other's peculiarities. In photography, giving due value to each, by placing the lights and shadows and objects in a photograph in such a way as to bring out their most salient points.

CONVEX—Lat. *convexus*, from *convehere*, to bring together—Rising or swelling into a spherical or rounded form. Said of a spherical surface or curved line when viewed from without, in opposition to concave.

COPPER, Cu = 63.1 CUPRUM—A metal of great value in the arts. Found pure, or nearly so, but abundant as red oxide and sulphides, combined with iron, and known as yellow copper or copper pyrites. Copper is a heavy metal of ruddy red color, nearly as malleable as

silver and gold; tenacious, ductile, and when extended in thin leaves is translucent, and absorbs all the rays but green, which is seen by transmission. At ordinary temperature oxygen has no action on it, but it oxidizes rapidly under the action of heat. At red heat it decomposes water; on exposure to moisture it becomes covered with a crust, improperly called verdigris. The crust is a combination of hydrate and carbonate. Strong mineral acids, when diluted, attack it sparingly, but the organic acids, acetic, malic, citric, tartaric, etc., dissolve it readily. Hot concentrated sulphuric and nitric acids attack it violently. Hydrochloric acid dissolves it with difficulty, aqua regia transforms it into cupric chloride. Copper unites with nearly every metal, forming alloys.

CUPROUS CHLORIDE— Cu_2Cl_2 —Prepared by precipitating cupric chloride by stannous chloride, $2\text{CuCl}_2 + \text{Sn}_2\text{Cl}_2 = \text{Cu}_2\text{Cl}_2 + \text{SnCl}_4$. A grayish white, very oxidizable mass, sensitive to light, insoluble in water or alcohol. Soluble in aqua ammonia, sodium, chloride potassium, iodide ammonia sulph., potassium cyanide, and hyposulphite of soda. The reducing action of cuprous chloride is applied to obtain chemically pure silver, by precipitating ammoniacal silver solutions with ammonio-cuprous chloride.

CUPRIC CHLORIDE— CuCl_2 —Anhydrous cupric chloride is yellow-brown. The hydrate is green, and crystallizes in prisms; deliquescent, soluble in water and alcohol. Heated to redness, it is reduced to cuprous chloride. Prepared by dissolving copper in aqua regia in excess, or by precipitating cupric sulphate by calcium chloride. Has been recommended as a good and safe reducer of too intense negatives. A 2 p. c. solution is as strong as necessary. The plate is then put in hypo. for a few minutes.

CUPRIC BROMIDE— Cu_2Br_2 —Bromide of Copper—Prepared by attacking copper with an excess of bromine in water. The solution is green, and deposits by evaporation *in vacuo* a dark brown crystalline mass, which turns blue in air. The properties of this salt are similar to those of the corresponding chloride—oxidizable, sensitive to light, soluble in the same salts, in hydrobromic, dilute hydrochloric acids and insoluble in sulphite and sulphate of sodium and potass. bromide. Major Waterhouse lately made pictures on bromide of copper in the camera, on a silvered and bromized copper plate, using a 5 p. c. solution of bromide of copper. The exposure was about five or six times longer than wet plates. Under a negative a few seconds of daylight was sufficiently developed with pyro and ammonia, or ferrous oxalate. Weak cyanide of potassium was used in clearing

(fixing). Hypo. was also used, but it breaks the image up. The finished picture is not unlike the daguerreotype, and just as easily injured. This salt has also been used for the intensification of weak negatives. Campbell prepared the cupric bromide by a double decomposition, that is, by adding two parts of potassium bromide to one part of cupric sulphate, and applied it to the negative, whereby a white compound of silver bromide and cupric bromide is formed. This he treats afterward, either with ammonia sulphate, hydrate, palladium chloride, or nitrate of silver, and thus obtains a black or brown-black precipitate of great intensity. If, instead of these reagents, an alkaline developer is used, without bromide, the reduction proceeds gradually and is similar in color to ordinary negatives. John Spiller's process of reducing the intensity of negatives is also based on the action of cupric bromide on metallic silver. The salt being dissolved in a solvent of the cuprous bromide, which has little action on the argentic compound, thus allowing one to reintensify the negative by development when the opacity is too much reduced. Spiller's formula for gelatine negative is cupric sulphate, 4 parts; alum, 4 parts; common salt, 4 parts; water, 32 parts. To which is added, when the salts are dissolved, an equal volume of cold saturated solution of common salt. The alum in this formula has for its object the prevention of the softening action of sodium chloride or gelatine.

COPYING DAGUERREOTYPES—First remove the plate carefully from the mount, and pass a camel's hair brush over the surface and clean it as directed in "Cleaning." After it is cleaned it may be copied in the following manner: It must be placed in a good light. If a top light, the plate must be placed sideways, so that the vertical light may fall in the direction of what are called the buff marks across the plate. If a side light, then of course the plate must be fixed upright. Placed in the sun at a proper angle gives the best of all illumination, if convenient to be had. The picture having been arranged, place the camera as for copying a photograph, using a rapid rectilinear lens and medium stop, and, to avoid reflections in front, a piece of cardboard about a foot square, covered with black velvet, having an opening just showing the glass of the lens. This will very effectually prevent all reflection on the polished surface. Use a slow landscape plate, not a rapid one, for in all cases the slower the better are the results obtained. Great care should be taken in remounting the daguerreotype; it must be bound round with gummed paper to prevent air getting in between the plate and

the glass. If it does, it will soon show signs of tarnishing. When well done, a new lease of existence will be secured.

Negatives—This may be done either by contact or by aid of the camera. Of course the resultant picture is a positive. With the camera, an enlarging camera can be used, or an ordinary one. With the latter the best way is to block out a window, leaving space enough only to insert the negative, placing a piece of fine and uniformly ground glass about one inch from it, on the outside.

Silver Prints—Place the photograph to be copied in an upright position by pinning to a drawing board, and stand this on a table. If you do not wish to use pins, an ordinary printing frame with a glass bed answers very well, care being taken that there are no scratches, etc., on the glass. Contrary to theory of the necessity of a front light, use an oblique side light, and the resultant negatives are practically free from grain. The camera should focus from the back, in order to obtain an accurate focus. The lens needed is a rapid rectilinear, of sufficient size to cover well the size of the plate to be used, and use slow plates. If rapid plates are used, it is essential that the emulsion should be rich in silver and plenty of it on the plate.

Oil Paintings—Require more care, and they always should be lighted from the same side as in the picture—not the reverse. The very best effects are obtained by using orthochromatic plates of medium rapidity. The yellow screen must also be used with ordinary plates to obtain any results that will prove satisfactory. But if possible, use the orthochromatic. In regard to the length of time required for the exposure, experience must alone determine this, for the exposure must vary very much, the colors of the subject, the actinic power of the light, and the rapidity of the plate being the factors that decide the question. Anyhow, give enough.

By Gas Light, Oil, Magnesium—Copying can also be done by the aid of gas light, oil lamps and magnesium, the latter being very effective. In all cases, except when made by contact, attention should be had to the proper adjustments of reflectors and screens. Counterfeit and raised checks, etc., have been detected by copying and enlarging the same, showing very plainly the original figures and names under the false.

CRAYON PORTRAITS—Photographs, finished with black crayons, have become deservedly popular within the last few years, especially the large and life size. The reader is referred to Gihon's Photographic Colorists' Guide for full information on this subject. Decidedly the best book for the amateur published.

CRYSTALLINE PROCESS, THE—A process quite fashionable a few years back of coloring photographs against glass. Briefly : The print was trimmed a little smaller than the size of the glass to be used, rubbed with a piece of linen rag dipped in benzine, then plunged in warm water twice and blotted on a clean towel. To the albumen surface a warm mounting solution of French gelatine, 20 grains ; water, 1 ounce, to which 5 drops of an alcoholic solution of salicylic acid is added. A mounting paste of French gelatine starch paste and Kingsford's Oswego blanc mange, equal parts, with 20 drops of an alcoholic solution of salicylic acid. Heat the above over a water bath, stirring the whole time. When cold it is ready for use. To a clean glass some of this paste is applied, and then the print is lowered carefully, albumen side down, and rubbed or squeegeed on to the glass, then dried. When perfectly dried the paper is rubbed down with glass paper until it is as thin as possible, and then the following is applied and kept hot to render the print transparent : Canada balsam, 5 oz. ; solid paraffine, 2 oz. ; white wax, 2 oz. At the end of an hour, on examination, it is quite transparent. It may be removed and when cold enough the excess wiped off. But if opaque patches remain, cool and rub down with more glass paper, and again apply the wax preparation. After it is cool rub off the excess and proceed with the painting.

CURTAINING THE LIGHT—Amateurs who may be the happy possessors of skylights will do well to pay attention to the proper arrangement of the curtains, so as to get the most favorable effect. Two sets of double curtains for top and side lights are to be recommended. The set next to the glass should be white, and a yard or more wide if desired, either in one piece reaching across the light, lapping over each other properly, so as not to interfere. Then under these a foot or more a set made of cambric, drab in color or slightly of a brownish shade. With these, full control of the light can be had, letting or shutting out light just as desired.

CURVATURE OF THE FIELD—An aberration of lenses. The image of a flat object formed by a lens cannot be received on a plane screen. The screen ought to be concave, or, in other words, the marginal image on the screen is not sharp, while the center is. This fault is generally thought to be due to spherical aberration, or even spherical aberration itself ; but it has nothing to do with it. It is corrected and the field flattened by the combination of different kinds of glass and an intelligent use of the diaphragm.

CURVATURE OF THE LENS—The curvature to which any particular lens is to be ground is calculated mathematically to suit the refractive and dispersive ratios of the glass of which it is to be formed. If, after it is finished, on examination, it fails to come up to the standard of sharpness, the particular surface which exercises control over the shortcoming is reground in a tool one degree deeper or shallower in curvature.

CUTTING OR TRIMMING PRINTS—A necessary operation to get rid of all unnecessary parts, and to reduce the print to a satisfactory size. Amateurs, as a rule, do not take enough care in properly trimming prints. Much more beautiful and satisfactory prints may oftentimes be made by cutting off certain parts of the view. All prints which have to be treated with a gold bath should be trimmed before toning, thus saving a waste of gold on unnecessary matter. They should be trimmed when toned, and for this purpose scissors known as bank shears, long blades, a common shoemaker's knife, or the little things known as Robinson's trimmers, for straight or ovals, can be used. If the knife or trimmer is used, a glass plate with beveled edges cut to sizes, known as glass forms, are required, though as a makeshift an old negative may be used instead of the glass form.

CUTTING GLASS BY HEAT—An iron rod, a common poker, will do, somewhat pointed, and the line along which the cut is to be made should be marked with chalk, only pasting a thin strip of paper alongside of it. Make a file mark to commence the cut, apply the hot iron, and a crack will follow the iron wherever we choose to lead it. In this way jars are easily made out of old bottles, and broken vessels of different kinds may be cut up into new forms. Flat glass may also be cut into the most intricate and elegant forms.

CYANOGEN — $C_2 N_2 = 52$ — This important organic compound was discovered by Gay-Lussac, 1814. Obtained by heating (strongly) dry mercuric cyanide in a glass tube, a transparent and colorless gas, which burns with a beautiful rose edge purple flame. Very soluble in water and alcohol. It was the first known of the compound radicals—compounds which can be transferred bodily from one chemical compound to another, just like elements. Its "compound atom," Cn, forms part of many organic substances.

Hydrogen Cyanide—Hydrocyanic (prussic) acid, HCN, was discovered by Scheele, 1782. Remarkable for its very poisonous properties. Odor is very powerful and most characteristic, resembling that

of peach blossoms or bitter almond oil. In its pure state very difficult to preserve, even in carefully stoppered bottles.

CYANIDE OF POTASSIUM --KCy—Prepared pure by heating potassium in cyanogen gas, or passing the vapors of hydrocyanic acid into a cold solution of potash; colorless, octahedral or cubic crystals. The commercial article comes in white opaque amorphous masses, of a sharp alkaline, bitter taste and an alkaline reaction. When exposed to the air, exhales the peculiar odor of hydrocyanic acid. Very soluble in water, but sparingly so in alcohol. The weakest acids decompose it, even the carbonic acid of the atmosphere. Impurities found are hydrates, carbonates, cyanates and formates of potash. It is a powerful solvent for oxides and cyanides of many metals, and especially for the haloids of silver. Was much more used formerly than now in photography. If used as a clearing bath (fixing) for gelatine emulsion plates, it must be perfectly pure. Any of the impurities mentioned above would lead to a weakening or destruction of the film. As a clearing bath for ferrotypes the best strength is about 2½ oz. to 64 oz. of water. It is a dangerous poison.

CYANIDE OF POTASSIUM, POISONING BY—It is a very powerful poison, acting on the system like hydrocyanic acid, fatally. In most cases its effects are a loss of sense, smallness of pulse, contraction of the pupil, convulsions, and death, when taken internally. Antidotes: Chlorine water, chloride of lime, ammonia, internally and inhaled. Cold applications. The poison may be introduced into the system by inhalation into the lungs of the gas always being given off, or by absorption from the surface of the body, by the frequent handling of the salt, either solid or in solution. It may take years to develop the symptoms, or they may present themselves in a short time. Many of these symptoms are frequently ascribed to muscular rheumatism, and appear to pass off under treatment for that affection, whereas it was the forced absence from the poison that produced the result. But some of the results produced by this poison can best be told as given by a victim: "I was obliged to leave a prosperous business on account of cyanide poisoning, and barely escaped with my life; confined for weeks in a dark room, losing every nail from my fingers. I can realize, in a slight degree at least, the danger in the use of cyanide, and I consider it my duty to caution all who are not acquainted with the effects of cyanide to let it alone, and the experience of many old artists will corroborate all that I have written."

D

DAGUERREOTYPE—Named after its discoverer, the discovery of which immortalized him. The process consisted of sensitizing a highly polished copper-silvered plate to the action of iodine, then exposed in the camera, developed by the fumes of mercury and fixed (cleared) by the cyanide of potassium or hyposulphite of soda. But the picture thus obtained offered several drawbacks. Its mirror like nature was one of the worst. To see the picture as fixed on the plate, it was necessary to hold it at a certain angle to the light, and it often looked more like a stained tinplate than an artistic drawing. The exposure was prolonged to at least fifteen minutes, and taking of portraits was out of the question. Then, too, the daguerreotype would not resist the slightest touch. A finger passed over it destroyed the whole, and it did not remain long intact. A short time deprived it of its sharpness. The first improvement made was the process called "gilding," consisting of imparting hardness to the coated surface by means of a liquid containing gold in solution, hyposulphite of gold and soda, giving excellent results. The plate was immersed in a weak solution of this double salt, and then gently heated over a spirit lamp. The gold replacing the dissolved mercury, and the picture acquired vigor and a capability of resisting moderate rubbing. The next improvement was to shorten the time of exposure by shortening the focus of the lens. The most important improvement did not take place till 1841, when Claudel, a French artist, discovered the properties of accelerating substances. Claudel first used chloride of iodine, then the fumes of bromide of iodine, bromide of lime, etc. By the discovery of these accelerating substances the long desired portraits were at length attained as early as 1840. A long description of Daguerre's discovery and the process of preparing a plate in accordance with his formula was published in this country.

DALLAS TINT—A photo-mechanical printing process, famous for its rendering of half tones. The working of this process is kept secret.

DALLMEYER'S STANDARD OF COMPARATIVE EXPOSURES—A lengthy and exhaustive table of the relative rapidities of the several stops for different lenses—in which some alterations are suggested to the usual manner of numbering, etc., the different stops. See *Philadelphia Photographer*, April 2, 1887.

DAMMAR—Resin obtained from the coniferous trees growing in the Malay Archipelago. It is a colorless, whitish, tasteless resin, solu-

ble in turpentine and benzole, and enters largely into the composition of various varnishes.

DAMP WALLS—Destructive to photographs—Several instances have occurred of the destruction of photographs hung on damp walls. The image fades and the paper soon becomes covered with mould. Paraffine or Willisden paper should be used as a preventive, if it is necessary to continue the hanging of the print on these walls.

DARK ROOM—The room—too often a closet—in which all the operations requiring the actual handling of the sensitive plate must be conducted. It should be of sufficient size to enable the operator to move about in comfortably, and to give orderly place for all the various articles necessary in the different manipulations that may be required in sensitizing and development, or whenever any work is to be done requiring a non-actinic light. A room smaller than 8x10 I believe to be objectionable in very many if not in all respects, both to the operator and the operations therein conducted. It cannot be kept in a state of cleanliness, which is absolutely indispensable for first-class work. It cannot be properly ventilated, and at an equable temperature at all times, to say nothing of the bottles and the various other articles necessary in the proper development and care of the plates. The dark room should always be kept warm, never, if possible, below 60 degrees F., and this, in cold weather, can always be done by one of the many coal oil stoves made expressly for heating purposes. The opening to the dark room should be through two doors nearly opposite each other, and opening differently, with a partial partition between them, thus cutting off all chance of light entering the room while at work, and yet allowing a thorough cleaning of the room when necessary. Have the shelves arranged around the room and of a sufficient number to enable one to have a place for everything, and thereby everything in its place. The top shelves for stock solutions, and a careful watch kept on them that there is enough and to spare at all times. The middle shelves to be occupied with convenient size bottles of various dilute solutions for every day use, and are to be kept filled from the stock solutions on the upper shelves, but keep the different solutions separate. It is convenient to have the lower shelf at least three feet from the floor and somewhat broader than the other shelves. A small shelf or a rack, about the level of the eye, on either side of the sink, should hold the graduate measures and stirring rods. Upon the table itself should be arranged only the dishes, trays, etc., in actual

use at the time. Trays large and small to be kept in racks beneath the table, according to their uses, and should be properly labeled. The sink should be at right angles to the table, at least 36x22 inches, and supplied with a good drain pipe. If possible, it should be of iron, porcelain lined, but a good one can be made of sufficiently thick wood lined with heavy sheet copper or zinc. The plugs to the drain pipe should fit tightly. On either side of the sink, a shelf slightly inclined should be fastened to hold trays, etc., and let the shelf on the further side from the table be always devoted to the clearing (fixing) bath, and for no other purpose, thus keeping the danger of contamination by hypo at the minimum. Under the sink racks are to be placed to dry trays, etc. If there be no regular supply of water by the ordinary pipe, a small keg will have to be placed a sufficient height, but not too high, to give a good force to the flow of water, which may be directed to any spot desired by attaching a rubber tube to the spigot in the keg, and the flow regulated by a spring clip.

For Illumination—Daylight, gas, lamp, electrical (incandescent) light can be used, provided it is properly protected by a shade or covering of some non-actinic material (glass, medium, or paper). The day of the "ruby" has in a great measure passed, since it has been found that a safe and decidedly more pleasant light can be obtained with other equally if not better non-actinic colors. Some combine with the ruby, canary or sunflower tint, others green, etc. But it will be wise to test the screens from time to time as to their safety. The dark room should be dark only to the actinic blue and violet rays of light, but illuminated enough by the non-actinic yellow and red rays to be enabled to see everything that is to be seen without strain to the eyes, and, in fact, pleasant to the operator. Should the room have one or more windows, block out all but one or two panes with some black material of sufficient thickness to exclude all light. The uncovered pane can be covered by three or more thicknesses of tissue paper of sunflower tint, held in its place with an additional pane of glass fastened to the frame. This will be found to give a safe enough light, and plenty of it, if it is desirable to work by daylight.

Ventilation—It is extremely important that the dark room should be thoroughly ventilated at all times; and to assist in this, many are in the habit of using the heat generated by the lantern, extending the chimney of the same in the shape of a long pipe, and thus creating a current of air out of the dark room.

DARK SLIDE--Sometimes plates upon being developed show signs of fog, and almost everything but the right one is blamed in these cases, when the real fault lies in the dark slide or holder, as it is called in this country. Plates long kept in these frequently show this fog. When afield the holders not in use should be well protected from the light of day.

DARK TENT--A portable dark room is very seldom used in this country.

DEAD BLACK PAINT--Take what painters call brown japan and mix in enough lamp black to give a solid color when thinned with turpentine to the proper consistence for laying on. For quick drying add a small portion of liquid drier.

DECIMAL SYSTEM--Weights and Measures--The metric system, formed on the meter as the unit of length, has four other leading units, all connected with and dependent upon this, viz., the meter, the unit of measure of length. The are, the unit of surface, and is the square of ten meters. The liter, the unit of capacity, and is the cube of a tenth part of the meter. The stère, the unit of solidity, having the capacity of a cubic meter. The gramme, the unit of weight, and is the weight of that quantity of distilled water at its maximum density which fills the cube of a hundredth part of the meter. Each unit has its decimal multiple and sub-multiple, that is, weights and measures ten times larger or ten times smaller than the principal unit. The prefixes denoting the multiples are derived from the Greek, and are "*deka*," ten; "*hecto*," hundred; "*kilo*," thousand; and "*myria*" ten thousand. Those denoting sub-multiples are taken from the Latin, and are "*deci*," ten; "*centi*," hundred; "*milli*," thousand. The following table embraces all the weights and measures of the system.

Relative Value.	Length.	Surface.	Capacity.	Solidity.	Weight.
10,000	Myriameter				
1,000	Kilometer		Kiloliter		Kilogramme
100	Hectometer	Hectare	Hectoliter		Hectogramme
10	Dekameter		Dekaliter	Dekastere	Dekagramme
Unit .....	. Meter	Are	Liter	Stere	Gramme
0'1	Decimeter	Deciare	Deciliter	Decistere	Decigramme
0'01	Centimeter	Centiare	Centiliter		Centigramme
0'001	Millimeter		Milliliter		Milligramme

(To be continued.)

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

THE AMERICAN PHOTOGRAPHIC CONFERENCE LANTERN SLIDE INTERCHANGE.

The Conference Lantern Slide Committee has sent the following communication to the secretaries of the clubs and societies in the conference:

Dear Sir,—We desire to call your attention to the action of the conference at its late annual meeting, with the view of organizing a Lantern Slide Interchange among the clubs in affiliation with it. To perfect the plan it is necessary to know at as early a date as possible what clubs will be prepared to exchange. As this action of the conference takes up the work heretofore so ably carried on by the American Lantern Slide Interchange, it is important that as many clubs as possible shall indicate their assent to the Interchange. This matter is very important. Club life will owe much of its pleasure and profit to this interchange of work. Each club will select from seventy-five to one hundred slides, using its judgment as to the merits of the work, without submitting them to the criticism of a central committee, as formerly.

Before the circuits are formed it is absolutely necessary to know what clubs will contribute slides. When this work is completed further communication will be had concerning the working details of the Interchange.

Signed, ELY VAN DEWARKER, Syracuse Camera Club,
CORNELIUS VAN BRUNT, Photo. Sec. American Institute,
PAUL THIERY, Newark Camera Club,

Conference Lantern Slide Interchange Committee.

Address 404 Fayette Park, Syracuse, N. Y.

THE AMERICAN LANTERN SLIDE INTERCHANGE.

The interchange for the coming season promises to be most interesting, and as a preliminary the executive committee has issued the following letter to the several directors of the different organizations, which explains itself:

NEW YORK, August 15, 1891.

Dear Sir,—The Executive Committee wishes to notify you that it is time to prepare slides for the season of 1891-92, and expects you will interest your club or society in getting together an interesting set of slides. What is most desired are pictures of a varied character or a connected series illustrative of one particular subject, and when it is possible, give in the list any interesting facts or data concerning the picture. There was a lack of such information in most of the sets last year which it is hoped will be improved upon this season. You are especially asked to do what you can toward getting up a full explanatory list.

The slides should be sent to F. C. Beach, Manager, 113 West 38th Street, New York, prepaid, on or before November 15th, next. You are not limited to the number but may send more than a hundred if you choose. It is probable the sets of two societies or clubs will be sent out together in one box as before, this will depend greatly on the quality and character of the slides received. The committee regrets to report the loss of two slides from the Vienna box, the responsibility for which it was difficult to place, but from the evidence secured, the loss appeared to occur when in the custody of the Chicago Lantern Slide Club. Another slide was lost from the set of the Syracuse Camera Club when in the custody of the St. Louis Camera Club. There is no reason why a single slide should be lost if proper care is taken in packing, to see that the numbers correspond with the list. To avoid similar occurrences in the future the committee requests that a certificate be enclosed with the box by the sender, certifying as to the whole number of slides enclosed and the number that are damaged. It is also requested that the slides do not go out of the custody of the director during the time they are in his possession.

Last March and April a majority of the associations voted in favor of the amendments authorizing the traveling expenses of the members of the executive committee to be paid out of the treasury at the annual test meeting, and the changing of the date when slides shall be sent in, from October 15th to November 15th. It was also voted not to merge the Interchange with the American Photographic Conference. These amendments are now in force. Up to the present time no extra assessment has been called for, and it is believed none may be required, provided the Interchange is released from the requirement in the rules for the reimbursing to clubs of money paid for expressage. It is advised that this clause be amended to the effect that, on July 1st of each year each club shall send to the manager a certified statement of the amount paid for expressage of slides from October 1st to July, and that he be required to equalize or adjust the amounts between the clubs making each pay the same sum. This will enable distant clubs to be on the same footing, in regard to transportation expenses, as those near by. The Committee expects to have five new sets of foreign slides during the coming season, three from England, one from Vienna, and one from Australia.

Contributions are asked for an exchange with the Australia society; a box should be sent off there this fall. Your club will receive as many slides of Australian scenery as you donate to be sent to Australia. Please select some of your club's best work, and send to Mr. Beach, during the month of October. The new system of packing slides in rubber-grooved boxes has worked very satisfactorily. Slides reported cracked in such boxes are believed to have been damaged outside of the box by careless handling. Boxes with pasteboard cells for slides also work very well.

It is expected the freight expenses on the foreign interchange sets will take up a large share of the annual dues. The committee intends to conduct the business as economically as possible. The increased interest afforded by these foreign sets will doubtless compensate for any extra expense that may be necessary. The committee urges all directors to give careful attention to the care and prompt shipment of the slides, and to notify the manager sufficiently in advance of the date of meetings. One set of slides will have to be shown before two clubs during each month, and on December 1st the circuits will be arranged by the committee. Your attention is called to the suggestions on enclosed copy of rules.

Yours respectfully,

F. C. BEACH,
W. H. RAU,
G. HUNTER BARTLETT, M.D.,

Executive Committee.

The Joliet (Ill.) Lantern Slide Club, the Photographic Club of Baltimore, and the Worcester (Mass.) Lantern Slide Club are expected to enter the Interchange. There will be larger collection of foreign slides than during last year.

CALIFORNIA CAMERA CLUB AMERICAN PRIZE PRINT INTERCHANGE

On August 4th, the club, at a meeting of the Board of Directors, voted to organize an American Prize Print Interchange. The plan embraces the collection by each club of mounted and unmounted photographs of every description; three annual prizes are to be offered by the club for the three best prints produced during each calendar year; such prizes to be of value, and to consist of something connected with photography. The prize prints of the local club and other clubs to be hung for permanent exhibition at the rooms of the local club, with dates and names of makers attached. A public exhibition of all the prints submitted to be made once a year at the local club, and the prints not winning prizes to be kept in suitable portfolios, for the inspection of the members or visitors. A special executive committee is appointed, to appoint judges, take charge of the prints, and enact rules. Each club in the Interchange is to forward to each and every other club in the Interchange a copy of each of its three prize prints within sixty days of the award of prizes. Each club to hang the pictures for exhibition, properly marked. On August 7th the executive committee met and adopted the following rules to govern the annual prize-print contest:

Rule 1.—Any active member in good standing may enter any kind of photographic print in this contest.

Rule 2.—The print must be the actual work of the member sending it, and from negative

made by himself, during the year of the contest only. No prints from negatives made during years previous to this contest will be accepted.

Rule 3.—Each contestant will send in one or more prints mounted to suit his own individual taste, and one unmounted copy of the same.

Rule 4.—Contestants will put no names of any kind on their prints, but fill out carefully the blanks provided for the purpose.

Rule 5.—All prints to be sent to the Executive Committee of Annual Prize Contest, Academy of Sciences building, and must be sent in before December 1st of each year.

Rules to govern the award of prizes and Award Committee. *Rule 1.*—The judges of award will meet at such times and places as they may deem advisable.

Rule 2.—They will take charge of and judge all prints sent in, and will not allow them to be inspected by any one whomsoever, and will keep their own counsel regarding them.

Rule 3.—The envelopes containing names and titles are to be kept with the prints and not opened till the day of award.

Rule 4.—The judges will decide the merits of the prints by the following points: Originality, 30; artistic beauty, 40; mechanical perfection, 30; total, 100 points. The print winning the greatest number of points will take the first prize.

The executive committee consists of Mr. Edward L. Gifford, Mr. H. B. Hosmer, Mr. E. P. Gray. In a circular letter addressed to the officers and members of each club, accompanying the rules, the following is stated:

"Will you join the American Prize Print Interchange? We want every photographic society in the United States and Canada in this scheme, and we believe it will be of universal interest, and a great factor in photographic instruction, as well as serving to beautify the rooms of every club in the organization. If you will fill out the enclosed blank at once, we will send you copies of our prize prints in January and will look forward to receiving yours about the same date. Our own and other clubs are most enthusiastic over this plan, and we look for your co-operation. Yours, photographically and fraternally,

Signed,

BOARD OF DIRECTORS, CALIFORNIA CAMERA CLUB."

The Society of Amateur Photographers of New York.—While no meetings of the society have been held during the summer, the board of directors have met regularly. The board has voted that the society join the "Conference Lantern-Slide Interchange," and has approved the holding of the exhibition at the American Institute Fair, without expense to the society. A guarantee fund has been started to meet contingent expenses. Most of the expense will be borne by the Institute. It is expected the amateurs' exhibit will be quite an attractive feature of the Fair. A committee consisting of R. A. B. Dayton, E. Warren and A. P. Shoen has been appointed to judge the work of the Yonkers Photographic Club with the Bausch and Lomb shutter. Members of the society are taking considerable interest in the shutter contest, excellent work having been done. The matter of a prize print interchange suggested by the California Camera Club has been presented to the society, but no action has been taken. The regular meeting occurs on Tuesday, September 8th. On Friday September 24th, a lantern-slide exhibition will be given of views by English amateurs. Miss C. W. Barnes' three pictures of "Elaine," as exhibited at Buffalo, have been and will remain for some little time on exhibition at the rooms.

The following circular and rules, under date of August 11, 1891, has been sent out:

EXHIBITION OPEN TO ALL MEMBERS.

The Board of Directors of the Society have accepted the following offer made by the Board of Managers of the American Institute, viz.: The use of the entire second floor of the Fair building (50x100), 64th Street, corner 3d Avenue, free of charge during the Fair, for the purpose of holding an exhibition of photographs. The exhibition will open on September 30th, and close November 28th. The exhibits will be divided into five classes, as follows: Portraits, landscapes, marines, instantaneous, enlargements. Fifteen bronze medals will be awarded, three in each of the above classes, as follows: First medal—*Superiority*; second medal—*Excellence*; third medal—*Merit*. The Society will select the judges, and make the awards. The Board of Directors in accepting the above offer, desire to announce the appointment of the undersigned committee of arrangements, who will have entire charge of the exhibition.

The Committee especially desire that all of the members be represented by an exhibit. T. J. Burton, F. C. Elgar, Fred. Vilmar, Committee on Exhibition.

RULES.

- 1.—There will be no charge for wall space, entrance fee, or of any kind.
- 2.—The Committee of Arrangements reserve the right to reject any exhibit offered; and if, in order to fairly apportion the space at their disposal among the various exhibitors, it becomes necessary to leave any pictures unhung, the rejections shall be made at the option of the committee.
- 3.—Entries of all exhibits must be made in duplicate, on blanks issued by the Committee of Arrangements, giving, for catalogue purposes, etc., information on the following points: Number and size of frame; amount of wall space required; total number of pictures; subject or title of each; lens and plate used for negative; name, address of exhibitor.
- 4.—The exhibitor's name and address, also a number corresponding to the descriptive number upon the entry form, shall be clearly written on the labels provided, which shall be attached to the back of each frame. When two or more prints are mounted in one frame a designating letter shall be placed under the center of each print, and, all letters so placed shall appear in the entry form opposite the title of their respective pictures. *Nothing else must appear on front of the frame.* Exhibitor's name must not appear on the front of the frame.
- 5.—No picture can be withdrawn before the close of the exhibition.
- 6.—All pictures must be sent at owner's risk, prepaid and delivered to the Committee of Arrangements at the place by them indicated, and return charges collected by carrier.
- 7.—The committee will not be responsible for any loss or damage that may occur to exhibits while in its charge, but will use all reasonable care to prevent such occurrence, and at the close of the exhibition will re-pack each exhibit and ship as directed by the exhibitor.
- 8.—Exhibits must be delivered at the Fair Building on or before September 15th; exhibits not ready on the above date will only be accepted by arrangement with the committee before September 15th.

Exhibits should be addressed to T. J. BURTON, Chairman, American Institute Fair Building, Third Avenue, corner Sixty-fourth Street, New York.

All correspondence respecting the exhibition, blank entry form and frame labels should be addressed to T. J. BURTON, Chairman Committee on Exhibition 113 West 38th Street, New York.

The Anthony Camera Club, of Anthony, Kansas, of six members, has been recently organized. It begins by the collecting of books as a nucleus for a photographic library.

Chicago Lantern Slide Club.—The secretary, Mr. W. A. Morse, reports that the club has recently secured commodious quarters in the Art Institute, with the Chicago Architectural Sketch Club, and is well provided for giving lantern entertainments during the coming season. The membership of the club is increasing.

Photographic Society of Philadelphia.—Mr. Robert S. Redfield, the secretary, reports that the society is about to move into new and larger quarters, where every facility for photographic work is to be provided. At present the society has a very pleasant, sizeable meeting room, and adjoining it a large closet, fitted up with dark-room accommodations, which is seldom used. Access to the meeting room, which is on an upper floor, is had through a winding stair-way. The new quarters are to be much superior in every way and fully equal to any other society in this country.

Brooklyn Academy of Photography.—A meeting was held during August soon after the return of President La Manna from Europe. He stated that the academy had been presented with a life-sized bust of Daguerre, by the Société Française de Photographie. It was voted to move into new and commodious rooms in the Brooklyn Trust Company Building, at the corner of Montague and Clinton Streets. The rooms will be fitted up with dark-rooms, and necessary apparatus. The Brooklyn Society of Amateur Photographers has merged with the Brooklyn Academy, thereby greatly enlarging the membership of the latter.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our reader, to whom timely notice of novelties may be valuable.]

NEWCOMB & OWEN, one of the most enterprising houses in goods for the amateur in New York, have issued a very instructive catalogue of the goods they have to sell. They are particularly well situated for business and supply a large amateur trade. Mr. Newcomb is a practical photographer, well versed in the many new processes, which makes their store all the more attractive, since, besides making a purchase, one is certain to obtain useful and practical information.

THE GENI CAMERA COMPANY, of Philadelphia, Pa., are making extensive preparations for the manufacture of their apparatus. The Geni Hand Camera is so arranged that after a dozen films or plates are exposed they may be removed in the field, and a fresh box quickly inserted. Several improvements have been made in it. The Company is offering additional stock for sale. John Carbutt and J. C. Brown are interested holders of stock. The camera may be put on the market this fall.

THE HETHERINGTON MAGAZINE CAMERA.—We are informed that several small improvements have been added to this camera, which increase its value. Among them is a brake attachment to regulate the speed of the shutter, and a nut inserted in the bottom for a tripod screw so that it may be securely fastened to a tripod for time pictures. Mr. Alfred L. Simpson, who has done some remarkably good work with the machine, has been designated as the trade agent for New York State.

BOOKS AND EXCHANGES.

CATALOGUE OF PHOTOGRAPHIC LENSES, by Ross & Co., 112 New Bond St., London, Eng.

An illustrated pamphlet, neatly printed, containing much interesting information about their different grades of well-known lenses.

PHOTOGRAPHY ANNUAL, 1891. Published by Iliffe & Son, 3 St. Bride Street, Ludgate Circus, London, England. Edited by Henry Sturmey. Price 2 shillings.

A compendium of useful information, more complete than has heretofore been gotten up, covering 800 pages. It is divided into eight sections: No. 1 includes useful reference tables; No. 2, Tips for Tyros; No. 3, Record of the Progress of Photography; No. 4, Selected Articles on Practical Subjects, by Practical Men; No. 5, The Latest Novelties in Apparatus, each kind being classified so that one may see at a glance the various kinds of hand cameras, shutters, etc.; No. 6 covers novelties in optical lanterns and adjuncts; No. 7 relates to photographic societies; No. 8 covers information concerning the photographic trade. There are sixteen illustrations, several being remarkably good. The book is necessarily bulky, but as it combines so many excellent features, this is not a disadvantage. It should be in the possession of every photographer.

United States Photographic Patents

Issued in August, 1891.

August 11th.

457,694 — Magic Lantern; A. W. Armstrong, London, England.

457,712 — Process of Photographing; I. H. Hamburger, New York, N. Y.

August 18th.

457,817 — Preparing Photograph Plates; O. Moh, Görlitz, Germany.

457,857 — Photographic Camera; D. J. Tapley, Newtown, N. Y.

458,128 — Photographic Camera; Chas. Mills, New York, N. Y.





THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

NEW YORK, OCTOBER, 1891.

No. 10.

Our Illustration.

THIS, the third of Miss Barnes' illustrations of Lancelot and Elaine represents the unfortunate girl after her journey to Camelot in the funeral barge. King Arthur has ordered her to be borne into the palace where her touching farewell letter is read and all the court pity her sad fate. While Lancelot muses over the lovely purity of the maiden, regretting his own marred past, Guinevere enters and, forgetting her mad jealousy, grieves over the sudden ending of the sweet young life. The picture is intended to illustrate the following verses :

So Arthur bade the meek Sir Percivale
And pure Sir Galahad to uplift the maid;
And reverently they bore her into hall.

.

And Lancelot later came and mused at her,
And last the queen herself and pitied her;
But Arthur spied the letter in her hand,
Stoopt, took, brake seal, and read it; this was all:
"Most noble lord, Sir Lancelot of the Lake,
I, sometime called the maid of Astolat,
Come, for you left me taking no farewell,
Hither, to take my last farewell of you.
I loved you, and my love had no return,
And therefore my true love has been my death,
And therefore to our Lady Guinevere,
And to all other ladies I make moan.
Pray for my soul and yield me burial.
Pray for my soul thou, too, Sir Lancelot,
As thou art a knight peerless."

Choice of Subject.

BY G. HANMER CROUGHTON, PRESIDENT CAMERA CLUB OF ROCHESTER, N. Y.



REMARK made by a member of our Camera Club has in it a great deal of food for thought. He said: "I have got to that point where I can set up my camera, look at the view upon my ground-glass, and then fold up the apparatus and go further without making an exposure." It is something gained when an amateur has arrived at this point; those who have will look back, with a sigh, upon the dozens of spoiled plates, probably good negatives but spoiled as pictures for want of a little care and consideration in the choice of subject or point of view.

The general or common idea for a subject for a view-photograph is represented by a remark made by a friend whom I was visiting. He was taking me for a drive, and said: "Wait till we get to the top of this hill, then you will see a view worth taking. Why, sir, you can see from there into four counties;" and he was very much surprised, when, on arriving at the wonderful view, I told him that it was not suitable for a picture. He was still more surprised when, an hour or two later, I planted my camera by the side of a small creek, having a large tree on the right-hand side of the picture, in the foreground a stretch of river and a few willows. He could not see that there was anything in it, but admitted that it was a very pretty picture when he saw the print.

There are a few simple rules (and it must be understood that these rules are elastic) that will guide the amateur photographer in making photographic pictures. In these days of hand cameras, it would seem to be easy enough for anybody to make a photograph, you have only "to touch the button, and somebody else will do the rest," but that is not making pictures by photography. In the choice of subject, the photographer, like the artist, must be governed by art rules, both as to composition, and light and shade. In landscape work choose a subject that will focus or concentrate some point of interest which shall form a central object in the picture, to which all other objects shall be subordinate. The point upon which the focus or center of interest will be concentrated will be where the darkest shadow in the picture will cut, or contrast against the highest light in the picture, in all cases. There the eye will fall first. Therefore, in choosing your point of view, look out for some object—a tree, stump, a piece of rock, or mass of foliage, or anything—where the shadowed part of the object is strongly outlined against the strongest light, make this the centre of interest, but *not* the center of the picture. This point of concentration may be assisted by adjusting the focus of the lens upon the principal object, and by using as large a stop in the lens as will give you sufficient definition in the surrounding parts of the picture to make them subordinate to the principal object.

Minute detail is always destructive of breadth, and photography exceeds in the reproduction of minute detail. Therefore, it is necessary to resort to

the use of a large aperture to the lens, to destroy as much as possible the minute detail in the parts of the picture that are simply subordinate.

An artist in sketching from nature, having settled upon the theme of his picture, will concentrate his detail and strength upon one central theme, making all others subordinate by less definition, less contrast, and less strength of color in proportion as these parts recede from his point of focus, and that is what should be done by the landscape photographer, as far as he can, in making a picture, photographically. That he has to overcome certain difficulties inherent to his material, is admitted, but there is no reason why the photographer should use his smallest stop because it happens to be supplied by the maker of the lens. The misuse of the stops is carried to a very great extreme by most amateurs.

In criticising a print submitted to me by one of our members, I was answered: "Why, I did not know that you could use too small a stop." I would almost be inclined to reverse this, and say that you cannot use too large a stop. I will say this: That no stop is too large that will give you pictorial definition at your point of focus, and enough diffusion of focus in the other portions of the picture to make the principal object stand out as it should, from its surroundings. Remember, that there can be no concentration where there are two or more lights of the same intensity in different parts of the picture. In that case, the gaze of the beholder is attracted from one to the other, and there is no rest for the eyes on one object; consequently, your picture will be deficient in the very essential artistic quality of repose. The lesser lights in the picture should be just sufficiently lighter in tone than the principal light, so that the eyes naturally wander from the central object to the other lights, and still come back and rest with satisfaction on the principal object in the picture.

It will be seen, then, how very few landscapes will, under ordinary circumstances, fulfill all these conditions, and the necessity of passing them by or waiting till under another aspect of light; the conditions may be right for the making of a perfect picture. That is what was meant by our club member, when he said that he had learned to look at a view and pass on. He is now satisfied to make two or three exposures in the same time that he formerly would have emptied his six double-holders, but he has fewer waste plates.

I have been surprised at the question repeated many times: "Is it necessary for the sun to shine to make a good landscape?" Emphatically, yes! A landscape, except under extraordinary conditions, without sun, will be flat, stale, and unprofitable. Also, a landscape taken with the sun directly behind the camera will be flat and insipid. Most of my best pictures have been taken with the sun decidedly in advance of the camera and late in the day, when the shadows were long and pronounced. It is, of course, necessary to shade the lens so that the sun does not strike either the glass or the inside of the lens tube, but that is easily managed, and the gain in effect is grand.

Photography in the Adirondacks.

By M. Y. BEACH.

THE Adirondacks, or North Woods of New York State, have an area of about ten thousand square miles; a wilderness, as most people know. of rivers, lakes, mountains, and forests, mixed up in picturesque confusion, and generally charming to the eye of an artist, whether the artist be painter or photographer. During the summer and fall this region of many natural beauties is occupied by more photographers than painters, and by many painters who are, for the time being, photographers, in order that they may secure materials to "work up" from photographs at their city studios during the winter months. The army of woods photographers is an army of amateurs. Of the stage loads of people who drive into the forests, almost three out of four are armed with a hand camera. This entertaining instrument of illustration is taking the place of the umbrella as part of a traveler's equipment. It seems as if, when the choice of hand luggage was made, the preference, as to the avoidance of a wetting or the opportunity to take pictures, was always in favor of the camera. If this preference continues to increase the umbrella is likely to "go," and leave the field entirely to the small box and lens. Concerning the small box and lens volumes have been written, leaving little more to be said, although one is much inclined to think that the patent roll-holders, films, and other concentrated photographic conveniences now on the market, are based on the plans published in England years before the introduction of the most famous of American hand cameras. Yankeeland can claim its share of credit in the improvements of these cameras.

Fish are a feature of the woods. Every angler who captures a trout weighing half a pound or upwards is as proud as Lucifer of the feat. At such a time the camera is in great demand. Pictures of that fish will interest the folks at home. As it is against the law to ship trout to the city from these parts, the next best thing to send out of the woods is a picture of the trout you catch. Like figures, the photograph is supposed never to lie. From a photographic standpoint the camera does not tell untrue stories. So the angler holds his fish as close to the lens as possible, until the size of the fish appears to be almost one-third the size of the man holding it, and to all appearances in the picture, the eight-ounce trout has expanded to a fish that might weigh between ten and twenty pounds. When the folks at home see this picture they exclaim in their amazement at the size of an Adirondack trout, also at the skill of their relative in catching such an enormous fish. Thus does the camera afford happiness to anglers and their friends, though sometimes actual twenty-pound lake trout are caught in Adirondack waters. A photograph of one of these "lakers" represents a fish the size of a gulf tarpon, six feet or so in length.

Deer rank next to trout as a sporting feature of the woods. Along with the camera and fish rod in the visitor's hands, comes the rifle, usually a magazine weapon, intended for the destruction of the monarchs of the forests. There are more rifles for the deer than there are deer killed; therefore, when an animal is seen or shot, it is an event worthy of the camera's attention, and invariably the camera comes into immediate use. This season the deer



have been so plentiful that it has actually been possible to obtain photographs of them as they were seen feeding in broad daylight on the shores of the lakes not far from Saranac Lake. While riding on the railroad between Plattsburgh and Saranac Lake, the writer was able to take an instantaneous picture of a wild spotted fawn, as it rushed from a clearing beside the track into the thick woods, some fifty yards away. Pictures of black bears and deer may be taken at times, while swimming in the lakes. Hounds frequently drive the animals into the water, and when the game is found heading for the opposite shore, the amateur photographer can row about among the creatures in a boat, and take as many snap shots as he pleases. After taking the desired number of photographs he can lasso the swimming deer or bear, taking it home alive if he chooses, although a three hundred pound bear is a rather lively companion unless its feet are securely tied. A novice in woodcraft will find that it is quite a trick to tie a bear's feet properly. The easiest way to treat a swimming bear is to shoot a hole through it, have the skin nicely stuffed, and sent to your home in the city. In this form you can photograph the "critter" to your heart's content, posing it to suit your fancy without incurring the danger of having holes made in your body by bruin's teeth, an ever present possibility when the animal is alive.

The most entertaining field for photographic work in the Adirondacks is landscape picture taking. Keene Valley and Lake Placid offer scenes almost rivaling in their grandeur some of the famous prospects found among the Rocky Mountains in Colorado. The peaks near by these Adirondack resorts are between six and seven thousand feet high. Nestled between

these mountain giants are lakes and rivers intermingled with meadow lands, that have the artistic features of an English landscape. Nature at her wildest is neighbor to Nature as we see her modified by the hand of man. This variety of prospect is attractive to a photographer because of its accessibility. Upper and Lower Saranac Lakes are fully equal in their beauty and general characteristics to the most charming of Scotland's celebrated lakes. The difference is, that these lakes of the Adirondacks offer views somewhat greater in extent than the Scottish lakes.

Camping is a desirable way to pass the summer in the woods. Hundreds of people pass their summers in this way year after year, some having a record of woods-life of over quarter of a century. Camping, as it is followed in the Adirondacks, embraces the living comforts of home as regards food and domicile, and the delightful quietness not usually found in the hotels. Photographers are found in the camps as they are found everywhere else. So enthusiastic are some of these disciples of the tripod and lens that they have erected, in addition to the tasty buildings in which they live, buildings suitable for dark-rooms. On Lower Saranac Lake, a Mr. Menier of New York, has just completed a model photograph house on his spacious camping grounds. In it is all the equipment to be found in the best-arranged dark-rooms of a city laboratory. From June to November this enthusiastic amateur revels in the conveniences of his woods studio. From the veranda of his house he finds subject matter enough to keep the camera busy all summer, and can take pictures choice enough to adorn the best of landscape albums. This gentleman occupies a veritable photographer's paradise, and, as are all true amateur photographers, he is happy in this instructive amusement.

A Safe and Sufficient Light.

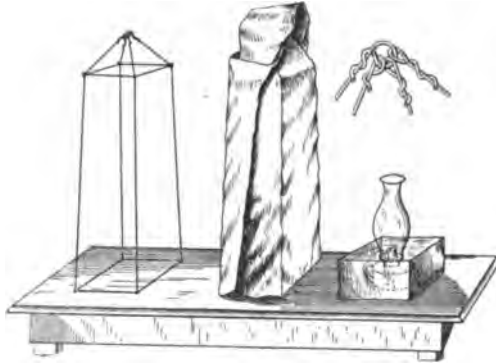
BY W. C. PECKHAM.

MY PROBLEM this summer was to secure a safe light under difficult conditions. The method I hit upon may be of value to others. The dark-room at the start was anything but dark. It was a closet opening from the kitchen of my summer cottage, rough boarded toward the outside of the house. There were many cracks which admitted light direct from the sky. Several sheets of black paper, which had been used in packing plates, and a can of LePage's glue (none so good) closed the cracks in the walls. A thick Scotch plaid blanket, hung over the door, covered it so that no light came in around it, and all was ready but the lamp. After much planning, an arrangement was found which has given complete satisfaction.

A piece of pine board, eight inches square, was taken for a base. Around its edges was tacked a strip of ruby fabric, six inches wide so as to stand four inches above the base and project an inch below it. This inch

was turned under the board, and tacked down, forming a box without a top. A low kerosene lamp was set into this box which had a board bottom and ruby-cloth sides so put together that no light could get out underneath its edges.

Now for the cover. With a pair of pliers a frame was made from the stout iron wire which is used in baling hay. The lower end of this frame,



about seven and a half inches square, was of size to slip easily within the bottom part described above. Its height, about thirty inches, was such that the cloth over the top was safe from being set on fire by the heat of the lamp. The frame at twenty-four inches from the bottom was six inches square. From this to the top, it was pyramidal in form. This frame was covered with ruby fabric, having an opening an inch or so wide at the top for the draft of the lamp. Over this hole a piece of the fabric was fastened, somewhat cap-shaped, as in an ordinary lantern. All this was done with needle and thread, and pins, and about a yard of the cloth. When this top is set over the lighted lamp no light can leak out at bottom, sides, or top. A few sheets of yellow paper are provided, one or more of which as may be needful, are wrapped around the top part before it is set in place. These render the light safe to do any work whatever, while the room will still be well lighted.

Cover the side towards the operator with black paper, and the eyes are entirely shaded from the glare of the red light, which is not only disagreeable, but injurious to the eyes, and blinds one to what is going on in the developing pan.

No more candles nor travelers' lamps for me. All such that I have seen leak light. A common house lamp may be used burning, well turned up and without smudge. This renders life in the dark-room in summer somewhat less of a burden now. I shall make one on a somewhat modified plan when I get home to my laboratory again, for permanent use.

THE
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F. C. BEACH.

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EDITORIAL COMMENT.

Delayed Subscriptions.—We regret to be obliged to call the attention of our friends and subscribers to the annoyance and delay which many have experienced in sending communications to our former office at Boston; our only apology is that there has been an inexcusable neglect, which appears to be unaccountable. We have made arrangements to have our correspondence addressed to Boston promptly forwarded here, and would ask intending subscribers to send their subscriptions direct to our present office, "361 BROADWAY, NEW YORK." We also request those of our subscribers who fail to receive their copies of the magazine promptly, to notify us. It is usually issued between the 15th and 20th of each month.

The Right to Photograph at the Columbian Fair.—The views of our contemporary, *The Beacon*, on the above subject, fully accord with our own, and we are glad to see it already endeavoring to create a sentiment among the officials, for free photography at the fair. Probably no restrictions will be made to the free entrance of bicyclists, with their bicycles, at the fair grounds, an instrument of recreation and pleasure no more attractive

and useful than a camera, yet to exclude the bicycle and compel those who wished to ride to rent them from one concern having a monopoly of the place, would at once be as distasteful, unpopular, and un-American, as is the proposition to exclude all cameras.

It is folly to suppose that a good thing cannot be made out of the fair by an official photographer appointed with authority to take every important object, and to have the exclusive sale of photographs on the grounds. He will sell enough copies on the grounds to people who do not photograph to more than pay expenses and clear a handsome profit besides. But to refuse the right of any one wishing to photograph on their own account, without a license, is, in our judgment, just now, a misconstruction of public rights. Cameras (particularly those of the hand sort) will be too abundant for such restriction. The greatest kind of freedom should be permitted, subject of course to such rules as will not interfere with the sight seeing public, and these may be simple and brief. The buildings and grounds are to be substantially public property, and should be permitted to be photographed, without restriction, the same as any other prominent building. We hope to see the Chicago Photographic clubs and societies make a determined effort to secure free photography at the fair.

Developer for Lantern Slides.—The following is said to yield purple tones on dry plates:

No. 1.	
Sodium sulphite,	480 grains.
Sodium phosphate,	160 grains.
Water,	8 ounces.

Then add:

Hydroquinone,	100 grains.
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No. 2.

Sodium carbonate,	480 grains.
Sodium phosphate,	160 grains.
Water,	8 ounces.

To develop, mix equal parts of No. 1 and 2. Some advise the leaving out of the No. 2 solution, the sodium phosphate.

A Reliable Mounting Paste.—One of our friends says the starch paste made as will be described works remarkably good. He puts the paste on the mount and presses the print thereon, rubbing it over with the fingers on an interposed sheet of paper. All surplus exuding at the edges is easily wiped off with a clean cloth and does not mar the mount.

Starch,	4 drams.
Warm water,	8 ounces.

Boil rapidly, constantly stirring, until it assumes a water color; it will then feel sticky to the fingers. The above quantity will be sufficient to mount 100 4 x 5 pictures. It should be mixed fresh each time.

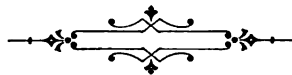
Clouds Obtained by Reflection.—A subscriber sends us a 4 x 5 photograph made on a Seed plate in which the clouds not observed in the sky are quite clearly seen reflected in the water. Our explanation is that the blue rays of the sky were absorbed by the water to a greater extent than those from the clouds, which, reflecting whiter rays, made the strongest impression upon the plate. There is noticeable a faint outline of a cloud in the sky of the print.

The London Pall Mall Exhibition.—From cable advices to one of our subscribers we learn that not a single American exhibitor succeeded in taking a medal at this notable exhibition. The exhibition opened the latter part of September.

Articles Wanted.—We especially invite amateurs and their friends to write something for the magazine, even if it be but a few lines, giving novel experiences, describing simple appliances, and relating any good story which has photography for a basis. We wish to give a series of illustrated travel sketches, and invite our friends to send us either mounted or unmounted prints. We design making the magazine the especial organ of the American amateur photographers, and shall deal liberally and impartially with communications sent to us. We call attention to Mr. Clarence B. Moore's sensible article on "Portraiture," and to Mr. Peckham's simple dark-room lamp. There are many little contrivances of this kind that pass unnoticed, but which, if brought out, would aid many over difficulties that are apparently of much importance.

The August Number.—We have received many inquiries from our friends and subscribers residing in Massachusetts, concerning the non-receipt of the August number. We think there may have been some delay or mistake at our former Boston office, which may account for it. We shall gladly forward a copy to all who may not have received it, if they will simply notify us by a postal-card.

Our Clubbing List; Special Rates for Renewals.—It appears to be the custom with a few publications to ask more when a subscription is renewed than when it is new; we are therefore obliged to make special rates for renewals, especially if it is the *Cosmopolitan*. Those who already subscribe for it may renew with the AMERICAN AMATEUR at \$3.50, instead of \$3, which is the new subscribers' trial rate. We believe the subscription price is to be advanced slightly on January 1st. The *Cosmopolitan* is a growing magazine. due, no doubt, to the liberal management and good talent employed.



An Experience with Rollable Films.

BY F. C. BEACH.

NOT long ago we had occasion to use a package of $2\frac{1}{2}$ inch wide transparent Eastman film that had been kept for some time, in a No. 1 Kodak camera. When the film was inserted in the camera it was noticed that the free end slightly adhered to the roll.

The camera was used first in an inland country and next kept at the seashore for a month, several exposures having been made. Wishing to remove the film, for the purpose of developing the exposures, we endeavored to slide out the film-holding compartment, but was prevented from doing so because the dampness had swollen the wood to such an extent as to almost cement it to the interior of the box.

The camera was next placed near a stove for a while, with a view of drying out the dampness; then an effort was made to slide out the film compartment, but to no purpose. As a last resort the front board was taken out, also the lens and shutter cylinder, then, with a round stick pushed through the aperture occupied by the lens, the film compartment was, with much effort, punched out from the box, giving access to the film.

The spool of exposed film was removed, and we proceeded to unwind it and cut off the exposures. Here we met with difficulty No. 2. As we tried to unwind, pulling on the loose end, we found the film adhered so strongly to the celluloid support that to unwind it it must be literally peeled off. Some parts would stick stronger than others, which would occasionally cause holes to be formed in the film. In giving the film a steady pull it would unwind for a quarter of an inch quickly or suddenly, then it would unwind half an inch more slowly. It was when these sudden movements took place that we discovered, in the dull light of the dark-room, a streak of bluish white light suddenly appear transversely across the film, at the point of separation from the roll, and appeared much more brilliant when we operated the film in a dark corner. It was a clear case of the production of electricity by what is called cleavage.

We had undertaken the development with the eikonogen developer of some of the exposures before we discovered the electricity, and obtained nothing but very foggy images, with a decided foggiess also on the portion of the film protected from the light, showing, apparently, that the film had been affected in some way previous to exposure.

We next turned our attention to the unexposed spool of film. On unwinding this, we noticed that the sensitive side also adhered to the celluloid support with which it was in contact, but not as firmly as in the exposed spool. On unwinding the film in a dark corner of the room, every little pull would cause a decided appearance of the electricity at the point of separation from the film roll, enough, at least, to fog a very sensitive bromide film.

These experiments led us to conclude that the unwinding of the film in the camera, by a quick movement, was likely to produce a sudden twitch at the point of separation from the roll, which, in all probability, generated the electricity, and fogged the film. Thus it will be seen the film was doubly exposed to the light of the electricity; first, before exposure, when unwound from the supply spool; and second, when unwound from the winding-reel.

We never before observed a similar phenomenon with the Eastman transparent film except the tree-like markings that used to appear before the remedy was discovered. Hence we regard this as a new feature in films.

It is possible that the dampness of the sea-shore had something to do with it, or that the film was not thoroughly dry when it was originally wound up, for the gelatine side adhered to the celluloid side with a tenacity that is noticeable when a gelatine film is slightly damp.

At the time we unwound the film the weather was damp and rainy, not at all promotive of the generation of electricity of the static nature. As a precaution we advise all users of films to unwind them a short distance in a dark corner of the dark-room before inserting in the roll-holder, and note at the point of separation whether there is an appearance of electricity.

To verify the curious phenomena observed, we took a roll of film about a foot in length, rolled it up on itself tightly and subjected it to the hot atmosphere of steam, emitted from a teakettle, for one or two minutes: then we let it stand for twelve hours. On unrolling it, in a dark corner of the room we found the film adhered to itself, more strongly at the edges, and discovered faint traces of electric discharges at the point of separation.

Para-Amidophenol, its Preparation and Use as a Developer.

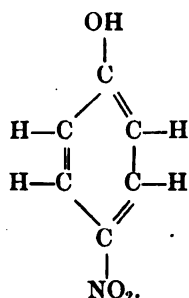
By JAMES H. STEBBINS, JR.

[Read before the Society of Amateur Photographers of New York September 8, 1891.]

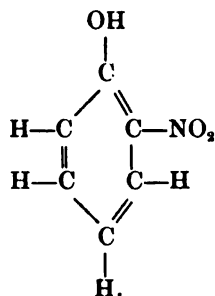
THE attention of chemists and those interested in experimental photography has, since the introduction of the extremely rapid plates which are now to be obtained upon the market, been turned in the direction of producing new reducing agents, which are capable of bringing forth the latent image upon an exposed plate in the shortest and most perfect manner possible. It is only a short time since that the photographic community was startled by the introduction of a new reducing agent, called eikongen, and which was said to be much more powerful than the time-honored pyrogallol; since then, however, numerous other compounds have been proposed, among the latest of which may be mentioned para-amidophenol. Para-amidophenol is a compound of the benzol group and is a derivative of phenol.

When phenol is treated with cold dilute nitric acid, a tarry mass consist-

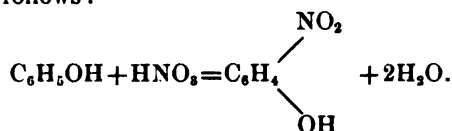
ing of two mono nitro compounds is obtained. The compounds are known respectively by the positions they hold in the benzol ring, as ortho and para-nitrophenols. On now submitting the tarry mixture to a steam distillation, ortho-nitrophenol distills over, leaving the para compound behind in the retort, and which, upon cooling, crystallizes out from the aqueous solution in long grayish colored needles, which when purified are perfectly white. This substance melts at 114 degrees C. and has the formula :



The orthonitrophenol on the other hand crystallizes in yellow needles and melts at 45 degrees C. It is represented by the formula :



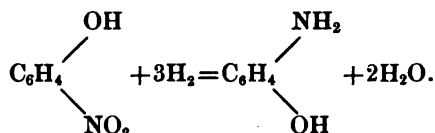
The reaction which takes place in the formation of the two isomeric nitrophenols is as follows :



It will thus be seen that one molecule of phenol unites with one molecule of nitric acid, forming a mixture of the two isomeric nitrophenols plus one molecule of water. In other words one atom of hydrogen of the phenol is replaced by the nitro group NO_2 of the nitric acid.

Of the two isomeric nitrophenols thus formed, the one that really interests us is the para-nitrophenol. On submitting this compound to a reduction with tin and hydrochloric acid or stannous chloride and hydrochloric acid

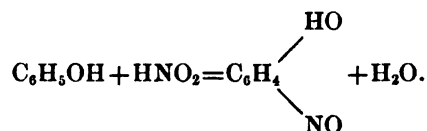
nascent hydrogen is evolved, which, reacting upon the nitro group of the nitrophenol, converts the latter into amidophenol and water.



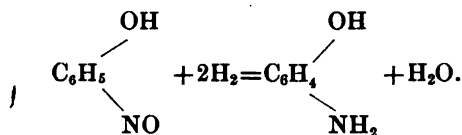
But, as in order to produce this result, it is necessary to use tin and hydrochloric acid, or stannous chloride and hydrochloric acid, we really get a tin double salt of para-amidophenol, which, when treated with sulphureted hydrogen, is decomposed, yielding the hydrochloride of para-amidophenol, stannic sulphide and free hydrochloric acid.

As the preparation of the paranitrophenol is quite troublesome, a simpler method for the production of the para-amidophenol would be by starting from the nitroso compound.

Nitroso compounds of the aromatic series are, like the nitro compounds, converted by nascent hydrogen into amido compounds, and as the preparation of the former is much easier than the preparation of the corresponding nitro compounds, it follows that the manufacture of the amido compounds must be simplified too. When nitrous acid is allowed to react upon phenol, equal molecules of each being taken, an atom of hydrogen in the benzol ring is replaced by the nitroso group NO with the formation of one molecule of water. Thus:



On now submitting the nitroso-phenol to the action of nascent hydrogen, the NO group is converted into NH_2 , or amido group, with the formation of one molecule of water.



But, as in this case, the reduction is likewise accomplished with stannous chloride and hydrochloric acid, we likewise obtain a tin double salt of para-amidophenol, which, upon treatment with sulphureted hydrogen, yields para-amidophenol hydrochloride and free hydrochloric acid.

In practice upon a large scale, therefore, the above method would undoubtedly be selected on account of its simplicity.

Para-amidophenol is both of a basic and acid character and is capable of

forming salts with acids but with not bases. If ammonia be added to the hydrochloride or para-amidophenol in sufficient quantity to neutralize the hydro-

chloric acid of the latter, the free base or para-amidophenol C_6H_4 $\begin{array}{c} \text{OH} \\ \diagup \\ \text{NH}_2 \end{array}$ is

obtained. The free base crystallizes in leaflets which melt at 184 degrees C., and are readily turned violet by the oxygen of the air. On adding hydro-

chloric acid to the latter we again get the hydrochloride C_6H_4 $\begin{array}{c} \text{OH} \\ \diagup \\ \text{NH}_2 \end{array}$ HCl ,

which dissolves in 1 to 4 parts of water and ten parts of alcohol. If, instead of treating the free base with hydrochloric acid, we treat it with sulphuric acid, then the sulphate of para-amidophenol will be obtained.

It has been found experimentally that the hydrochloride of this substance exerts a very strong reducing action upon the haloid salts of silver, and for this reason it has been proposed by Andresen and others as a developer. The formula which has been recommended is as follows:

Sulphite of soda (crystals),	50 grams.
Caustic soda,	25 grams.
Para-amidophenol hydrochloride,	5 grams.
Water,	1000 c. c.

It is said that this compound is more powerful than eikonogen and does not fog the plates. It was my intention to have tested the para-amidophenol as a developer, but it took me so long to prepare the sample that I was unable to do so in time for this meeting. I will, however, be able to report upon this point at our next meeting.

SELECTIONS FROM OUR FOREIGN CONTEMPORARIES.

SOFT NEGATIVES.—If a soft negative is desired, and the worker prefers gradual development, the prior soaking of the film will secure equal development. When strong contrasts are wanted, and the exposure is correct, use a strong developer and don't saturate the film with water.—*The Photographic Record, Manchester.*

Prefers Time Exposures.—Gambier Bolton, in *The Practical Photographer*, says: "He never uses a hand camera, all of his work being done with a whole plate camera and Ross lens. He rarely uses an instantaneous shutter, preferring to wait hours, or even days, for a favorable opportunity

to give a two-second exposure. He rarely, if ever, works in sunlight, choosing dull and cloudy days on which to make his exposures, by this means getting rid of heavy shadows."

Care of Lenses.—Lenses should be kept in a pure dry atmosphere, away from dust and damp. These impair the perfect polish of a high-class instrument, and, by scattering some of the light which passes through, produces a degree of fog in its images and negatives. Lenses should not be left before a fire or in the sun to become unduly heated; nor should they be so cold, when used in a damp atmosphere, that moisture is condensed upon their surfaces. Use an old clean cambric handkerchief to remove dust. A visible speck on a lens is of less importance than invisible and general imperfection of polish or a film of fine dust and moisture.—*Journal of the Photographic Society of India.*

Picture Making.—The art of picture making depends upon the education of the eye, but to educate the eye takes time, study, and perseverance.

—*W. McLiesh in Photographic Reporter.*

Duplicate Negatives.—To obtain from a thin negative a duplicate which will yield a vigorous print: the negative, after fixing and thorough washing, is bleached in a solution of mercuric chloride and dried. It now appears as a positive when backed by any dark material, black velvet being the best which can be selected. The glass is now set up before the camera and a new negative made from it.—*The Photographic News.*

Sensible Advice.—Photography, if it had no other advantage, is invaluable in cultivating the faculty of observation. We, most of us, think that when we look at a thing we see it all; there never was a greater mistake. . . . Don't leave "pretty well" alone; if there is anything to be done to improve the view, do it. Make the best you can of your subject and with the materials at hand.—*The Camera, by J. Gale.*

The Value of Using Different Makes of Dry Plates in Photo-micrography.

BY W. C. BORDEN, M.D., U. S. A.

WHILE the variation in rapidity of different makes of plates is pretty generally understood and taken advantage of in practical work, the variations of plates in contrast and range of tones are not generally discussed in photographic literature, nor are the great advantages to be obtained by taking proper advantage of these variations understood, or generally practiced. Hardly a photographic journal appears without either some new

formula for a developer, or some new method of working an old one, by which it is claimed that some modification of rapidity or contrast may be produced in the plate on which they are used. Quite a large portion of photographic literature is devoted to giving these means of producing required effects in negatives, and every box of plates contains information (?) how to obtain greater or less rapidity, or contrast, as may be desired; when in fact, after the light has once struck a plate in a particular way, so changing in a particular ratio, the molecular structure of the sensitizing chemicals with which it is coated, but little change in result can be produced by *any* developer, however much that developer may be modified. A modification, however, of the *coating* of the plate, giving a different chemical basis upon which the light acts, will, from the different arrangement and kind of molecules acted upon, produce a different result whatever developer may be employed. It is in this way that variations in result may be best and most surely obtained, for different makers of plates use sensitizing formulas differing in such manner that the coatings, when acted upon by light and "developed," give results differing in rapidity, contrast, and range of tones. That almost universal advice: "Get a good plate, master its peculiarities, and then use this plate exclusively," is good only so far as getting a good plate and mastering its peculiarities are concerned, for, however well the working of any one plate may be understood, results cannot be obtained from it alone, upon *all* kinds of objects, equal to those obtainable when different makes of plates are intelligently used, in a manner to make their peculiarities bring out, in the resulting negative, the effect sought for. For instance, if the object to be photographed has but little contrast, and a plate giving great contrast and a short range of half tones be used, a good printing negative will usually be obtained, while, if a plate having opposite qualities were used, no amount of careful exposure or development would give a negative having sufficient contrast to print properly. Similarly with an object having great contrasts, a plate giving little contrast and long range of tones, will give a negative in which the contrasts of the object are so lessened that printable details are given in the densest parts, while, were a plate having opposite qualities used, the strong contrasts of the object would be so reproduced, or exaggerated, that a print devoid of all detail could be obtained only. As in photo-micrography, owing to the peculiar nature of the objects to be photographed, great difficulties are often encountered, the ingenuity of the operator often being taxed to the utmost, it follows that a proper selection of the plate to be used will add greatly to his resources, and will enable him to obtain results which could not be obtained were only one make of plates used, whatever legerdmain of exposure or development he might practice.

But, in order to take advantage of the different properties of different plates, it is necessary to know exactly how they differ; and this must be determined, not by exposing the plates to be compared in a camera where

the light may be constantly varying, and where the personal equation of the operator may enter as a disturbing factor, but in a manner by which each shall receive equal treatment. For purposes of comparison, I have used a pad of thin white tissue paper (onion skin), $4 \times 4\frac{1}{2}$ inches in size, made of superimposed pieces of the paper, each piece being 4 inches long and $\frac{1}{2}$ inch narrower than the next sheet underneath. This pad, when placed on a piece of clear glass in a 4×5 printing frame and viewed by transmitted light, gives nine gradations of density from clear glass up. Such a pad answers for all practical purposes, though one $7\frac{1}{2}$ inches long placed in a 5×8 printing frame and used with strips cut lengthways from 5×8 plates, will give a longer range of gradations. To test two or more plates, a strip about one inch wide and five inches long is cut from each, and placed side by side, film side down, on the pad in 4×5 printing frame. They are then clamped in the frame, exposed for one instant to diffuse daylight, or for a few seconds to lamp light; and are then all developed together in the same developer. It is best to develop for fully twenty minutes in a covered tray, with a developer containing a rather large quantity of sodium sulphite. If about 30 grains of the granular sulphite is used to each ounce of developer, yellowing of the films, which might be produced by the prolonged development, will be prevented; and this without any ill-effect on the resulting negatives. Development for fully twenty minutes is recommended in order that development be fully completed, *i. e.*, that *all* the molecules of silver acted upon by light be reduced, for in this way only can the exact properties of all the strips be brought out, inasmuch as some plates develop more rapidly than others, and a stoppage of development before completion will produce erroneous results. The illustration given with this article is a reproduction of the result arrived at by comparing a "Harvard" plate, sensitometer 40, with a "Seed" plate, sensitometer 25, in the manner above described. It is a reproduction of the negatives themselves (not a print from them), so the lighter bands represent the thinner bands of the original negatives.

The great difference in the two negatives is seen at a glance. The greater rapidity of the "Seed" plate is shown by band 9 in the plate, where the light had to act through 9 thicknesses of paper before acting upon the plate, being equally as dark as band 5 in the "Harvard," where the light had to act through but five thicknesses. The comparative rapidity of the Seed to the Harvard, is therefore as nine to five; or for practical purposes it may be considered as double. The greater contrast of the Harvard, and longer range of half tones of the Seed are shown by the same range being gone through in five bands in the Harvard, *i. e.*, from band 1 to 5, that requires nine bands in the Seed, *i. e.*, from band 1 to 9. In other words, a certain gradation of light in an object photographed, which will give with a Seed plate a certain contrast in the negative, will with a Harvard plate give practically double the contrast.

This comparison shows at once that the Harvard is the better plate to use when objects having little contrast are to be photographed, or when contrast is desired; and the Seed is the better plate when rapidity is desired, when an object having strong contrasts is to be photographed, or when

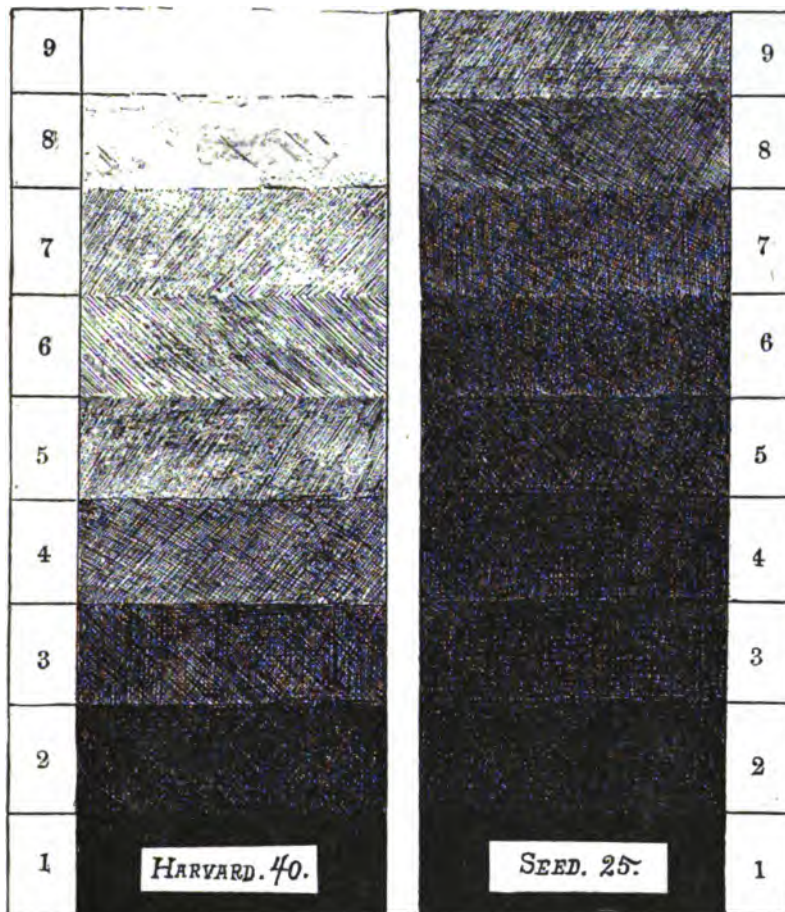


PLATE SHOWING GRADATIONS OF DENSITY.

By kind permission of G. W. Smiley, editor of *American Monthly Microscopical Journal*.

strong contrasts are to be avoided and a "soft" negative desired. Also, that by the intelligent use of these plates, or others having similar qualities, results may be arrived at which could not be obtained by the exclusive use of either alone.

I have called attention to these particular plates, and have used them in illustration, because they have the opposite qualities, by taking advantage of

which almost any microscopic object can be successfully photographed. Not but that there are on the market other plates having qualities in every way equal to the plates particularly mentioned. For instance, the "Eagle" plate, sensitometer 40, is an almost exact duplicate of the "Harvard," 40, in both rapidity and relative contrast; and Carbutt's "Keystone," sensitometer 16, is almost identical with the Seed, 25, in all properties except rapidity. All plates, having the qualities of the Harvard and Eagle, give great contrast and short range of half-tones, and are therefore best adapted to objects having but slight contrasts. With such plates satisfactory negatives can be made from such little contrast, that were plates like the Seed, 25, or Keystone, 16, used, negatives having printing contrast could not be made at all. Conversely, plates having like the Seed, 25, and Keystone, 16, low contrast and long range of half-tones, will satisfactorily reproduce the details of objects having great density or contrast, which details would be entirely obliterated if plates like the Harvard or Eagle were used. As plates similar in other qualities often vary in rapidity, as is the case with the Seed, 25, and Keystone, 16, this variation can be taken advantage of where the light is more or less strong, or where greater or less rapidity is desired, without in any way affecting the result, so far as the printing qualities of the negative are concerned.

I have, however, never found the most rapid plate too quick, even with low powers and sunlight, as I habitually use a light filter of a color complementary to that of the object to be photographed. For these filters, being generally either yellow, green, or yellowish green; considerably lengthen the time of exposure; so much so, that while with a Zeiss' 2 m.m. h. i. apochromatic objective, a projection eye-piece, 4, and an amplification of 1,500 diameters: a Seed, 25, plate will require about 35 seconds; a wet collodion plate, using a blue filter, would require but about two seconds.

As the Seed and Harvard plates have the opposite qualities, which adapt them to almost every object to be photographed, before using other makes they should be comparatively tested, either with the plates named, or with some plate with the workings of which the operator is familiar, when their actual qualities will be demonstrated and their adaptability ascertained. Only by such testing can the operator know exactly what to expect, or be able to arrive at the best results, for this, like other work connected with microscopy, should never be of a hap-hazard sort.

The worker in photo-microscopy, who uses plates having opposite qualities as regards density, contrast, and range of tones, and who uses them intelligently, will obtain results which cannot be equaled by the one who uses one make of plates only, or who uses all kinds, as may happen, without a knowledge of their properties arrived at by comparative testing.

—*American Monthly Microscopical Journal.*

The Buffalo Convention and its Lessons.

By MISS CATHERINE WEED BARNES.

[Read before the Society of Amateur Photographers of New York, September 8, 1891.]

HAVING known something of amateur exhibitions and discussions, it has also been my privilege to study the professional side at the Washington and Buffalo Conventions, and this paper is intended to be rather a series of impressions than a stenographic report of proceedings. Comparison, not only of methods of work, but of discussion, is exceedingly useful to both professional and amateur photographers, and hence the value of exhibitions and conventions such as the one at Buffalo and our own last May. By this I mean when they are rightly conducted and not made occasions for mere display or trying to suit every one. This last would, of course, be impossible, but they should be made occasions for deliberately, conscientiously, and persistently seeking to raise the standard of photographic work. Every convention, every exhibition should leave a record on the photographic calendar worthy of consultation by the workers of the future, else what is its real value? It must either be an example or a warning. The difficulty always is to get a number of men with widely differing capabilities, mental and moral, to work for a given end without allowing self-interest, justifiable to a certain extent, but not until it becomes absolute selfishness, to hinder perfect concord. And there is another point. In our day and generation it seems impossible to effect any kind of organization among followers of any special trade or profession without being brought face to face with some form of that nineteenth century hydra—the labor question. Like other social problems of the day, it is casting its shadow before, and yet I doubt if this thought would occur to any one except an amateur as being suggested by anything at the Buffalo meeting, although there were signs there which led me to think that very careful leadership will be needed to bring the P. A. of A. through the next two years. Being brought into quite close contact with the “powers that be” on that occasion, I can testify that the executive committee was exceptionally well fitted for its duties, and that such were faithfully discharged. The arrangements as to prizes were carefully made and were more liberal than at any former convention. Competitors were to be known only by numbers, and the judges’ names not published until after the awards were made. Each judge examined the pictures separately and then compared their markings. In spite of this effort at privacy, I was told the names of several competitors by another exhibitor who was not supposed to know them any more than myself, and who urged me to name my own exhibit, which I declined to do. At one session the subject of awards was so sharply handled that one set of judges resigned almost at the last moment, making it necessary to select others, a very difficult thing to do. A leading delegate told me that, if he were judge

in any contest where professionals and amateurs competed, he would find it hard to give a prize to one of the latter. He said it sincerely, and was not alone in his opinion, though others were just as decided as to ranking both classes on equal terms. Winning a prize, to a professional, is, of course, as good as a free advertisement and he feels, naturally, that the amateur is in no need of that. It is rare that an exhibition is held where the awards are distributed to suit the general verdict, and people are apt to think there must be something very faulty in human judgment when its action seems so often governed by apparently remote causes. Disinterestedness might be supposed, one would think, to inhabit the sub-cellar, if there be one, in the well popularly believed to be tenanted by Truth, as she so seldom is seen at the surface of the earth, but the position of judge at any competition is, in my belief, not one to be desired. They are almost certainly blamed by some one and, in strict justice, they should be credited with an intention to decide fairly, subject to the ordinary fallibility of human nature. It is both useless and unwise to quarrel with fate on such occasions and merely proclaims the humiliating fact that you think more highly of your work than others do, and we all know that self-praise is no praise. The music caused by blowing one's own trumpet is seldom enjoyed by any one except the performer. Failure is not an agreeable sensation, but there is always a reason for it, and one should be interested in tracing out the same, for there is much more to be learned from unfavorable criticism than uncritical praise. Can one be said, however, to fail who simply does not gain a certain prize? Is there not a deeper, truer success than merely gaining a medal or diploma, pleasant as that is? I have had reason to be thankful many times for failure when, in subsequent efforts it led to much better work. The sting of failure is sometimes required to develop what might otherwise remain latent powers. In this connection, might it not be well to suggest placing two shelves in one's mental laboratory for criticisms and commendations? We generally get both unless hopelessly mediocre workers, and they should be kept in stock solutions so that when we are unduly elated, the criticism bottle might be used to advantage and consolation be gained after failure by recourse to the commendation solution. This, if kept in a saturated form, should be used very cautiously, as when too strong it is apt to have bad effects.

In considering the Buffalo Convention, it is wise to remember that professionals and amateurs look at the photographic shield from two very different standpoints,—money—and love. Necessity is, too often, a heavy drag on artistic progress, but, as the world is constituted, so must it be. We must accept that fact, taking it into thoughtful consideration; and the professional who claims the amateur is ruining his business says so, often, realizing the faults in his own work and grudging, under the pressure of daily labor, the leisure for careful work enjoyed by most amateurs. Among several hundred delegates at Buffalo there were all grades of workers and the

student of physiognomy could readily discern those who were right or wrong in entering the profession. Men well-known and honored in it were met on all sides with, also, earnest beginners and those who would never advance beyond tin-types. There were, besides, a few women who, it should be stated, were treated with respect and genuine consideration. One, a delegate from Iowa, spoke several times, practically and sensibly, and one other read a paper which was kindly received. It would have been a dull brain which could not gain some ideas from the numerous private and public discussions, but it was disappointing to have so many papers read by title. Much of the effect of a paper so often depends on the delivery and just as much care should be given to that as to its preparation. Indeed I believe in doing even the smallest thing carefully as well as the greatest, it is a good habit to form.

A great mistake was made in having the sessions held so far from the center of the city, as much time was lost in going back and forth, and the members, as a whole, were very dilatory in coming together. It was almost necessary at some sessions to send out a town-crier, if I may be allowed the expression, to collect an audience, and the constant passing in and out was annoying to speakers and hearers. The building was a large, barn-like structure, with very slight partitions and a broad staircase, on a landing of which the meetings were held. The high ceiling and wide, open spaces on three sides rendered it still more difficult to speak or hear, and though behind the President's platform a sheet had been stretched to overcome currents of air, it was not of much use. There was almost constant noise in the Stock Department on the floor below, especially on the first and second days when there was great confusion; for much of the arranging had been left until the last moment. It did not seem as if so much was made of this department as there should have been to fairly show the great improvements of late years, though most of the best known dealers were represented. It was not possible to see the exhibits satisfactorily, they were spread over so much space, and to do it one had to neglect the regular sessions, which many did, I am sorry to say.

One specially notable feature of the convention was the free space given to the photographic press, and this is a custom worthy of permanence.

The Art Department was in a separate structure some distance from the main building and very well adapted to its purpose. There was plenty of room and a good light, but I must endorse the criticism in the Buffalo press to the effect that the exhibition should have been open to the general public during the whole time of the Convention. They were only admitted for part of one day on payment of a fee which ought not to have been charged, considering the distance visitors were obliged to go and the short time they might stay. Members had to show their badges to enter. After sending such a large, and in the main, a good collection, exhibitors were entitled to

have their work seen by as many people as possible. The public should have been enabled to study the pictures thoroughly and not have the exhibition made a kind of close corporation affair; that is to say, if it was intended to be educational in its nature. The public needs education in these matters as much as, if not more, than the photographers. I am continually surprised at the questions asked me about camera work, and people say: "I did not know there was so much in it, that there was anything creative about it," and similar remarks. It interested me to note the various comments made by onlookers in the Art Building. One man said to a friend, as they were looking at the Grand Prize pictures: "Elaine! Oh, yes! By Shakespeare." Another said: "Why! There are only three figures in the death scene, there ought to be the whole court." I wanted to ask him if he had any idea of the difficulty of keeping so many people quiet for the requisite length of exposure, and if he felt like incurring the expense and trouble of indefinitely wasting 11x14 plates. The Grand Prize pictures, by only four exhibitors, were in the second or main room, and faced the entrance. In the first, or ante-room, were a number of bromide enlargements, some of Jackson's fine views and those of H. P. Robinson. I showed a gentleman the latter's work and explained about combination printing, when he declared that such methods were not fair in photography, and seemed surprised at my not only justifying them but praising them. Some of the exhibitors had pictures framed together, with and without retouching, which were very instructive and a new departure was made, for American professionals, in Mr. Stuber's platinum prints. Mr. Inglis, of Chicago, showed some bromide prints with sepia tone, and received a special prize, but, if I am not decidedly mistaken, that process has been worked by amateurs for some little time past. Mr. Stuber told me that he prepared his own platinum paper, which accounts for its brilliancy and exquisite tone. There was some very good bromide work, mainly in the line of enlargements, and the majority of the pictures were, of course, portraits. In these there were examples worthy of careful study, and I particularly noticed the large heads by Mr. Hall, of Buffalo, but it struck me forcibly that, as a whole, there was great evenness among them and little effort to get out of the beaten track. The exhibition taken all together, did not compare with that held in New York last May, but the proceedings of the Convention proper will reward careful perusal. It adjourned to meet at Chicago during the Columbian Exposition in 1893, but I cannot help feeling that it will be very much like trying to ride two horses at once. The vote was passed by the Convention with a rush, but time will show if the step was a wise one.

Portraiture.

BY CLARENCE B. MOORE.

IT CONVEYS no news to most amateurs to state that portraiture is one of the most difficult branches in photography; it being of course understood that artistic portraiture alone is referred to, since any one can take a picture that will be recognized by the friends of the sitter.

The average amateur is badly handicapped in his attempts at indoor portraiture by the absence of light from above. But in the larger cities at the present time, are galleries for hire, while in the smaller towns the local operator can always be induced to put his skylight at the disposition of one making it worth his while. The ambitious amateur therefore need not be hampered in his attempts at portraiture for want of a skylight. But even under these more favorable circumstances, it will be found that lighting is a science not readily acquired.

Continual practice with occasional instruction from some leading professional added to good judgment and careful attention to hints from more advanced amateurs, cannot fail in the end to lead to the production of artistic work.

Artistic posing is, if possible, more difficult than successful lighting, since it necessitates not alone the ability to evolve and to arrange the pose but judgment in the selection of models capable of yielding satisfactory results.

There are certain sitters whose innate awkwardness, and still more whose excessive self-consciousness are so great that time spent upon them is useless. Nay, worse than useless, for the artist, as a question of morale ought never to undertake a portrait which he subsequently will be compelled to abandon. All artistic portraits require endless patience with eternal vigilance, and the habit too easily to relinquish a picture ought not in any way to be fostered. Hence one should avoid undertaking the impossible, and it is well to gauge the capabilities of the model, prior to entering upon the sitting.

As it is almost impossible wholly to originate a pose, it is advisable for the amateur to keep a scrap-book in which to paste every illustration suggestive of the graceful and the artistic, to be found in the papers or magazines. These with modifications and improvements are often the basis of very successful work.

Do not print a picture for which an apology is necessary. A failure is provoking to be sure; still it is not sympathy the amateur is seeking but a portrait that commands appreciation.

Particular attention should be given to correct timing; that is the keystone of the arch as far as the technical portion of the picture is concerned.

Photographic journals are filled with methods and recipes to save in development under and over-exposed plates. If the writers of these articles can do this as successfully as they can point out the method to others, they

are worthy of all praise ; at the same time it is not impossible that, as the darkey said of the revivalists, " Dey talks mighty different but dey does de same tings."

It is of course understood that such portraits are not under discussion as may evoke praise from the recipient when gratuitously presented, but those which meet with appreciation from strangers capable of judging artistic work upon its merits alone.

Methods of draping can hardly be treated of in so short an article, but a few words as to the material may not be amiss. As all photographers know the development of white to give perfect detail is far from an easy matter, and many artistic portraits are lost by those not thoroughly understanding the method of lighting on account of the hard appearance of the drapery. Various inexpensive but artistic costumes can be made from cheese-cloth, while in this material a slight shade of yellow gives more leeway in development. Cream colored shawls of *crepe de chine* for a similar reason are useful accessories in a gallery.

Never attempt a large head without the use of a head rest. The results will be surely disappointing if, listening to the assurance of the sitter that none is required, you undertake the exposure without one. In some the beating of the heart is sufficient to cause double lines. A slight indistinctness is sometimes desirable in artistic portraiture, but this must be attained by a certain want of sharpness in the focus and not through motion.

And now a few words as to the outdoor portrait. The writer has pointed out in other articles that for large heads it is desirable to place the sitter with the sun somewhat to one side, and then by raising a sheet fastened upon two poles to cut off the glare thus leaving a strong but soft illumination upon the face.

In this way a quick exposure with a small stop can be made with every chance of success.

A cloudy day is also favorable to portraiture, as is a pose made in the shadow cast by some object not above the sitter's head.

In portraiture as in everything else, difficulties recede before care and perseverance.

Printing with Platinum.

BY G. HANMER CROUGHTON.

[Read before the Camera Club of Rochester.]

LIKE many other photographic processes it was not born ready fledged. The process as worked to-day is the result of persistent work, looking to improvement all the time, by its inventor, Mr. Willis, an Englishman. It is true that Sir John Herschel had discovered, some time before Mr. Willis, that the salts of platinum under certain conditions were sensitive

to light, but no practical process was made known till Mr. Willis patented his method some time between 1874 and 1878.

John Traill Taylor, the editor of the *British Journal of Photography*, says it was in 1873 that Mr. Willis was greatly puzzled with the difference in the action of chloride of platinum in contact with ferrous oxalate to the salts of gold and silver. From a solution of either of these two metals the metal was deposited the instant a solution of ferrous oxalate was poured into them, but with the platinum solution, even when it was heated, no action took place. He made various experiments to overcome the difficulty, but all his efforts were unsuccessful till a note by a French chemist led him to try the neutral oxalate of potash, and this was successful. When into a test tube containing ferrous oxalate a solution of oxalate of potassium is placed, on heating the solution, the ferrous oxalate is dissolved, and if chloride of platinum is dropped into it platinum black is thrown down.

This is the reaction which takes place in platinum printing. A good paper is coated with a solution of ferric oxalate and chloride of platinum. This when dry is exposed under a negative and the picture shows a faint buff color. When the half tones begin to show, the printing is complete, and, although the image is very faint, there is quite sufficient to be able to judge of the final result. We have now the ferric salt converted into the ferrous wherever the action of light has taken place through the clear parts of the negative, and this is in intimate mechanical union with the platinum salt. The ferrous salt formed by true action of light will reduce the platinum only if brought into contact with oxalate of potash at a high temperature. The unaltered ferric salt having no action upon the platinum, so that the highest lights being protected by the negative and the ferric salt not being converted into the ferrous, no action takes place but where the light, passing through the thin parts of the negative converts the ferric salts to the fullest extent. The developing solution of hot oxalate of potash deposits the largest amount of platinum black to form the deepest shadows. The unaltered ferric salt is removed by an immersion in a dilute solution of hydrochloric acid and the acid rinsed out with one or two changes of water and the print is finished.

The sepia tones are obtained by dropping into the oxalate developer a few drops of a solution of chloride of mercury. I am not quite sure that this is as permanent a color as the black. I have used mercury for toning collodion transparencies, but have always been somewhat skeptical of its permanence. But this was in contact with the silver salts; how it may be with the platinum salt I do not know.

There is another method of platinum printing which is, to coat the paper with ferric oxalate without the platinum salt, but with a small quantity of chloride of mercury, this is developed with a cold solution of oxalate of potash and chloride of platinum. This does not develop quite so instantly-

neously as the hot process, and the progress can be watched, and the print being put into the acid the development can be stopped at once.

The last method of platinum printing is that published by Pizzighelli. A heavily-sized paper is coated with all three of the solutions, the ferric, platinum, and oxalate salts, and the printing is continued till it is dark enough, when the acid water does the rest. This in brief is the chemical action which takes place in printing on platinum paper. The sensitizer I am about to give will be to develop prints made to-day on the paper supplied ready sensitized by Willis & Clements of Philadelphia. You will see that the pictures are very faintly defined, and that as soon as they are floated upon the hot developer, the picture, in all its strength, makes its appearance.

How to Transfer Engravings from Paper onto Glass for Lantern Slides.

TO TRANSFER printing upon glass, the following process is recommended: Thoroughly clean and dry a plate of glass and pour upon it a mixture of turpentine and Damar varnish in even parts, and allow this mixture to dry; but, before it is entirely dried, the preparation of print which is to be transferred should be begun. It is to be placed face downward upon a smooth sheet of thick paper, and to be saturated by means of a sponge applied to the back of the print with a three per cent. solution of nitric acid, whereby the cohesion between the paper and ink is reduced, and the transfer made easy. The glass plate is then placed upon felt or flannel, and the print is carefully put upon the glass plate and smoothed down upon it in such a manner that no air bubbles remain. After it has entirely dried, the paper is slowly rubbed off with dampened fingers, and the picture will remain upon the glass plate, and may afterwards be protected by giving it a light coat of varnish.—*Lithographic Art Journal*.



"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 388.

DECOMPOSITION OF LIGHT—When white light or that which reaches us from the sun passes from one medium into another, *it is decomposed into several kinds of light*, a phenomenon to which the name of *dispersion* is given. In order to show that white light is decomposed by refraction, it is only necessary to let a pencil of solar light pass through a small aperture in a window shutter of a dark chamber, and interpose horizontally a flint glass prism. The beam on emerging from the prism becomes refracted toward its base and produces on a distant screen a vertical band, colored in all the tints of the rainbow, which is called the solar spectrum. Now these different colors can be recomposed into white light again in various ways, either by allowing the spectrum produced by one prism to fall upon a second prism of the same material, and the same refracting angle as the first, but inverted. The latter reunites the different colors of the spectrum, and the resulting pencil of light will be colorless, or if the spectrum falls upon a double convex lens, a white image of the sun will be formed on a white screen placed in the focus of the lens. In speaking of chromatic aberration, we mentioned that a lens was made up of numerous prisms, and that that fault was corrected by the application of an additional lens. The brief account of the recomposition of white light will, we hope, make it easy to understand the reasons for and manner of said correction.

DECOMPOSITION OF GELATINE—Gelatine when long boiled breaks up into *semi-glutin* (insoluble in alcohol, precipitable by chloride of platinum) and *semi-collin* (soluble in alcohol and not affected by chloride of platinum.) If this breaking up occurs, the gelatine loses its "setting" powers. Long-continued heating at 86° or 122° F. produces in time an effect like that of boiling. Semi-glutin reduces nitrate of silver (and very probably bromide also in presence of ammonia). The breaking up is hastened by the presence of ammonia. Under long heating a process of rotting sets in, accompanied by the formation of ammonia, volatile fatty acids, glycol, peptone and carbonic acid; ammonia remains in the solution in combination with fatty acids. The tendency to decompose should always be determined by the photographer. Expose a 5 or 10 p. c. solution in a covered flask to a temperature of 86°–104° F. for several days or a week; bad gelatine will rot in from three to four days, giving off enough ammonia to turn moistened red litmus paper blue. When this happens it will be found to have lost its "setting" power. A good gelatine, on the other hand, will

not give off ammonia after eight days, and still preserve its setting power, though somewhat diminished.

DECOUDIN'S PHOTOMETER—An instrument for measuring approximately the strength of light on the ground glass, thus giving an estimate of the proper time of exposure.

DEFECTS IN ALBUMEN PAPER—Cracking of the surface of the prints when they are dried; wooliness, caused by the excessive dryness of the albumenized paper during the various photographic operations. Extraordinary brilliancy is generally a sign of this weakness, but it must not be inferred by any means that all brilliant papers are open to this objection. The paper should not be kept in too dry a state, nor allowed to roll up. Very dry paper repels the silver solution. Nor after sensitizing should it be allowed to dry too rapidly. Cockling or wrinkling under pressure in the printing frame, which no amount of padding will prevent. *Remedy*—After the paper is dried as usual, give the middle of the sheet an extra dry over a lamp or gas stove, and the paper will be found to lie flat. *Distortion of the image, caused by the contracting and stretching of the paper*—The paper contracts and expands nearly three times as much across the narrow way of the sheet as in its length. Cut the paper accordingly.

DEFECTS IN PLATES—See Failure in Gelatine Bromide Plates.

DEFECTS INCIDENT TO THE CONSTRUCTION AND USE OF RAPID COMBINATION LENSES—A serious element of danger is to be found in the endeavor of makers to produce lenses having what opticians term a greater intensity ratio than those of others. The aperture of a lens is limited by the density of the glass of which it is formed. The large aperture of the modern aplanatic doublet is owing to its being formed of glass of much greater density than the ordinary flint and crown. The greater the density, the more may the aperture be increased, still retaining those qualities for which this lens is remarkable, *i. e.*, good transmission of oblique rays. Here comes in the danger. This increased degree of density is unfortunately liable to decomposition, with more or less rapidity, showing a well marked degradation of color, if removed from the tube and pressed down upon a sheet of white paper. As this discoloration takes place, so does the slowness increase. Therefore let those who possess lenses for which special claims for rapidity are made keep them under cover from the action of light when not in use, for the glass from which they are made contains so much lead or other density-forming bodies as to insure serious

discoloration, and consequent slowness of action, before many years have elapsed. There is another defect which seems to be inherent in some of these lenses, and often not discernible when working inside, but only when operating outside with a moderately bright sky, and that is their tendency to produce a ghost or flare spot in the center of the plate. This may be obviated by either increasing or diminishing the distance between the two lenses.

DEFINITION—A term used to describe the power of a lens to accurately concentrate the rays of light emanating from an object upon the ground glass, or sensitive plate without spreading or overlapping them. Its perfection of definition depends upon its accurate correction of chromatic aberration, rapidity, composition of the glass employed, the relative positions or forms of surfaces, proper grinding, the centering of the elements of a combination in a single position of the diaphragm, and in a doublet, the centering and proper separation of the combinations.

DEFLECTION—Latin *deflexio*, to bend aside—In optics it means a deviation of the rays of light toward the surface of an opaque body by inflection; the peculiar modification or direction which light undergoes in passing the edge of an opaque body, usually attended by the formation of colored fringes, etc., more usually called diffraction.

DENSITY, COMPACTNESS, OPACITY—One of the qualifications of a good negative is that the density shall be just sufficient to give proper relation to the shadow and at the same time permit the detail in the high light to print. The amount of density which it is desirable to give to the image depends on the nature of the surfaces on which the positive is to be printed, for negatives well adapted to one kind of surface are not always suitable for others. Negatives that will give good results on albumen paper will not necessarily produce equally good results on mat surfaces, such as platinotype, bromide and plain paper. For printing on albumenized paper, the negative should show all the details in the shadows, and be of moderate density; for albumenized paper renders the most delicate gradations. Mat prints, photogravures or heliogravures, however, require that there should be as little deep shadow as possible in the negative, and a small amount of high light, not more than a quarter. Most of the tones should be half tones, subdued light and lit up shadows and great opacity in the high lights for photo-engraving purposes; and not too intense for mat surface prints, which do not render well details in the deepest shadows. The

operator must seek to give his negative those special qualities which best fit them for the purposes to which they are to be put, for the amount of density must be determined by the circumstances governing each. Slow plates, having a large amount of iodide of silver, give better results in density than the rapid ones, which will always give a feeble image; an excess of the reducing agent or prolonged development will increase density.

DENSITY, TOO GREAT—Dependent either upon too prolonged development or too large an excess of the reducing agent in the developing solution. To reduce this a modification of Farmer's process has in my hands always been satisfactory and easily controlled, either upon the dry or wet film; 5 grains of red prussiate of potash is dissolved in 1 oz. of a 5 p. c. solution of hyposulphite of soda. This mixture should be prepared as it is wanted, for it rapidly decomposes. The plate is dipped into the solution and rocked until the reduction is satisfactory. Frequent examinations are required. It should then be well washed under a tap first and then in still water. Local reduction can be made by the aid of a camel's hair pencil, or rubbing the spot with a soft rag dipped into alcohol, or with a tuft of absorbent cotton. See Reduction.

DENSITY, TOO LITTLE—Depends very frequently upon the emulsion coating the plate, excess of over-exposure and under-exposure. See Intensification.

DEPTH OF FOCUS—Depth of focus is a property of a lens to give a tolerably clear image of objects not in one plane.

DETAIL—The proper rendering of every minute part of the subject photographed, either in the negative or print or both.

DETAIL, WANT OF—Caused by insufficient exposure, by want of sufficient alkali in the developer, or by excessive use of a restrainer.

DETECTIVE CAMERAS—See Hand Cameras.

DETERMINATION OF THE TIME OF EXPOSURE—Is one of the most important of photographic manipulations. One that requires careful study of all the facts which determine its length, together with much experience, and even then it is only possible to acquire an approximately correct judgment. The physical, chemical and optical conditions present, and influencing the duration of the exposure, are the three principal factors that must be considered. The physical conditions relate to the nature, intensity and color of the light—the distance, color and lighting of the object to be photographed. The chemical relates to the method of making the sensitive compound and its ratio of sensitiveness; and the optical

conditions that influence the exposure are the focal length of the lens, the size of the diaphragm, the number, thickness and degree of coloration of the lenses, and the distance from the view. All of these conditions will be found to be subject to one or more of the following laws: 1st. The time of exposure is proportional to the square of the focal length of the lens, the aperture remaining the same. 2d. The duration of exposure is inversely proportional to the square of the diameter of the aperture. This law applies, therefore, to the use of the diaphragm. 3d. The exposure required by different objects is proportional to the square of the focal length divided by the squares of the diameters of the aperture. 4th. The time of exposure varies inversely as the distance of the objects to be photographed. To this law is due the reproduction of the effect known as aerial perspective. Various tables have been formulated for approximate exposures. The two most prominent ones are Burton's and Dorral's. The latter is probably the preferable one, as Burton's tends to over-exposure, especially in this country. After all, the best tables to be had are those furnished by observation and experience. Reliable exposure meters are made, based on the time required to turn sensitive paper to a certain color.

DEVELOPERS—Agents which, by their power of reducing the salt of silver to the metallic form, render the latent image formed by the action of light, etc., on the sensitive plate visible. Many substances possess this power, though in a variable degree—the salts of iron, sulphate, borate, phosphate and tartrate, pyrogalllic acid, hydroquinone, hydroxylamine, eikonogen, pyrocatechin, resorcin, etc.; almost daily others are proposed. For the wet plate, the proto-sulphate of iron, with a few drops of acetic acid, was and is used. For the dry plate, sulphate of iron (ferrous oxalate), pyrogalllic acid, hydroquinone and eikonogen, have more than an experimental value, and are now the reducing agents most commonly used. *Each having decidedly its own place in photographic work, and each its own pronounced advocates.* The oxalate of iron developer is simple, clean and easy to work; it is regular in its action, and does not stain the hands or film. But its faults are that it does not work well with short exposures, neither does it admit of so wide a range of modification to correct errors of exposure as do the methods with pyro, hydroquinone or eikonogen. Pyrogalllic acid is a powerful reducer, has a wide range of modification to adapt to the varying needs of the operator, gives better modeling, and a more perfect rendering of the half tones. It will

stain the fingers, and when the development is prolonged is apt to stain the film. Hydroquinone, another powerful reducer, was for some time kept back from general use on account of its high price. But since the price has been reduced, it has been very generally used, and its strongest advocates claim for it almost unlimited powers, especially for landscape work. Within the last two years eikonogen has also been introduced, and has met with much favor as a reducing agent of great power. That it possesses many good qualities cannot be denied. It is cleanly and does not stain either the film or fingers, and is also capable of considerable modification, and giving agreeable softness to the image, and also of shortening the exposure. By some it is thought to be much superior to pyro for instantaneous work. Not unfrequently we are advised of the special merit of a particular combination of one of the reducing agents and alkali, with certain other more or less inactive ingredients for developing dry plates. We are also told from time to time that a certain developer is the best for one brand of plates, and another kind for a different brand; this may be so to a certain extent only. For if the proper proportions of the reducing agent and alkali are present (no other constituent is necessary), the picture will be developed, irrespective of the brand of plate. The resulting negative will, however, depend for its perfection upon its sensitiveness, the character of the gelatine, and the presence or absence of iodide in the emulsion; but none of these differences indicates the need of material change in the developer, for with the right exposure, the same developer will serve equally well for all plates. But the correct exposure for each kind of plate must be learned by experiment, and it must not be forgotten that the correct time of exposure depends upon the developer as well as upon the plate. I do not advise a cast iron form of developer for all plates, on the contrary would decidedly advise to modify the proportions to suit one's method of work. Some plates give hard negatives, and unless full exposures are given, a more energetic developer is necessary to obtain a satisfactory negative with such plates. The statement frequently made that bromide is absolutely necessary is a mistake, for my experience has shown that any commercial plate can be developed without a bromide. Neither will we consider here the other constituents that are frequently added to the developer. The only important one is sodium sulphite, which, though it has an influence on development, is not added for that reason, but only to keep the solutions and plates clear and free from color. The developer pure

(To be continued.)

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

Photographic Section of the American Institute.—The first regular fall meeting was held on Tuesday evening, September 1st. On Thursday, September 17th, the annual outing of this section occurred under the direction of the committee, Cornelius Van Brunt, Oscar G. Mason, Arthur H. Elliott, and W. I. Lincoln Adams. Those who attended had a very enjoyable time. Fort Lee, on the Hudson, was the objective point. A group of the party was photographed at the Bluff Point House. The weather was all that could have been desired.

The California Camera Club, 819 Market Street, San Francisco, Cal.—The season was opened, on September 1st, by an exhibition of prints and apparatus and an exhibition of lantern slides, entitled "Among the Maoris, Samoa, Fiji, Tasmania, and New Zealand." Concerning it the *San Francisco Chronicle* of September 2d, says: "The feature of the monthly meeting of the California Camera Club, last night, was a stereopticon exhibition of slides prepared by C. H. Morgan from photographs taken in Australasia. The views projected on the big sheet were clear cut and of the highest order of camera work. There were scenes from among the Maoris, Samoans, Fijians, Tasmanians, and New Zealanders, illustrative of the native styles of dress, or undress, their habitations and peculiar customs, and many charming bits of island scenery. The club also arranged for a field-day, on September 9th, deciding to rendezvous at Big Lagoon, on the Trockmorton ranch, Marin County. Fifty cameras at least will be on the ground, and the majority of the photographers will be of the fair sex, that element of the club having been heretofore somewhat neglected on such occasions. Final arrangements were made for a benefit for the club on September 25th. On that evening 200 slides will be exhibited, all the work of club members. The proceeds will be devoted to improving the facilities for photographic work in the association's rooms. In the near future the club will give an exhibition of photography in colors, E. J. Molera, the treasurer, having obtained full data from the Academy of Sciences of Paris."

Concerning the exhibition held on September 25th, the *San Francisco Examiner*, of September 26th, says: "From every possible point of view the first "pay exhibition" of the California Camera Club, given in Metropolitan Hall, last night, was a magnificent success. The large audience-room was crowded; even standing-room was scarce. The pictures presented were superior as a collection to anything of the kind ever shown in this city, while here and there among the 200 slides exhibited were gems that could not be excelled anywhere. The exhibition was given for the purpose of fitting the rooms of the Camera Club with the latest improved apparatus, not only for the taking of photographs, but for developing them by the various processes. From over 500 slides or pictures prepared for the stereopticon, submitted by the members of the club, 200, as stated, were selected for last night's exhibition. The views were so arranged that had there been twice the number exhibited the assemblage would have cheerfully waited for the last one. Landscapes, scenes along the coast, on and around the bay and in the city predominated, but there were also shown many beautiful figures and several really laughable pictures, all in the highest style of the photographic art. Indeed, it was hard to believe that the work seen last night was that of amateurs. To rest the spectators and relieve the strain caused by the total darkness in the auditorium necessary to a proper display of the pictures, there were four intermissions. During the first intermission Carrie Roma sang a soprano solo. During the second, Miss Gertrude Judd, the charming little whistler, was received with great applause. Miss Helen Hosmer read a poem during the third intermission, and the fourth and last was taken up by William West in a topical song decidedly clever. Then followed a keen and highly relished illustrated satire upon the directors of the club by E. L. Gifford,

Charles Francis Adams reading the text accompanying the pictures. None enjoyed the satire more than the directors themselves, and it was relished by the club members because it made innocent fun of the foibles of the excellent gentlemen who have worked so hard to make the club the success it is. George W. Reed, president of the club, presided at the exhibition. The Camera Club should be, and doubtless is, proud of the success achieved last evening. In but few if any cities on this continent could a better showing have been made by a band of amateur photographers.

The tickets kindly sent to the editors are appreciated.

Brooklyn Academy of Photography.—Regular Meeting, September 9th.—The new quarters in the building of the Brooklyn Trust Co., corner of Clinton and Montague Streets, were inaugurated on this evening. The occasion was not a formal one, but a large number of members and their friends were present and expressed approval of the arrangement and appointments of the rooms. The large lecture and meeting room is adorned with some of the finest specimens of the skill of the members, a life-size bust of Daguerre, presented by the Société Française de Photographie of Paris, and portraits of Nicephore, Niepce, Fox Talbot, Poitevin, Davanne, Lippman, and other eminent photographers. The laboratory is filled with several developing rooms most conveniently arranged, and ample light is provided for printing, copying, enlarging, and other processes. President La Manna exhibited a number of prints on the new kallitpe No. 2 paper, an improvement on the No. 1, which required nitrate of silver in the developing solution. The silver salt is now incorporated in the coating of the paper, the printing is carried on in a different light until the details show faintly, and the picture is developed in a solution of rochelle salts, borax, and bi-chromate, different proportions giving different tones. The society has now 105 active and corresponding members. The officers are: President, Frank La Manna; First Vice-President, Gonslo Poey; Second Vice-President, W. Arnold; Recording Secretary, H. Tremper; Corresponding Secretary, Harry S. Fowler; and Treasurer, E. N. Quantin. Regular technical meetings are held on the second Wednesday of each month and informal meetings on every Wednesday. President La Manna proposes soon to give two lantern exhibitions of views taken by him during a recent tour through the most picturesque districts of France and England.

Dr. E. H. Lyon, of the Brooklyn Academy of Photography, has recently made a series of interesting experiments in photographing horses in rapid motion, which lead him to conclude that Muybridge was mistaken in affirming that horses never assume the so-called "conventional" attitudes in which they are portrayed galloping or trotting. While the doctor does not disprove the correctness of the apparently unnatural attitudes first observed by Muybridge, he shows, in support of his own theory, many photographs of fast trotting horses in an attitude identical with that depicted in the well-known picture of Dexter. Some of these pictures were exhibited in the new rooms of the society.

The Yonkers Photographic Club.—The club has an active membership of fifty, and occupies commodious quarters in Hawthorne Hall. President J. W. Alexander and a large number of the members have decided to take part in the annual united outing of New York, Brooklyn, Newark, and Hoboken clubs, on October 3d.

The Hoboken Camera Club.—The new quarters, at 360 Park Avenue, are unexcelled in the perfection of their appointments and may serve as a model for similar organizations. The house is three stories high, with a light basement, and has a frontage of thirty feet with a large extension in the rear. The whole of the second floor has been thrown into one spacious apartment, which is used for the club meetings and for lantern-slide exhibitions. The dark-rooms, printing rooms, etc., are in the extension, and are fitted with all the latest conveniences. The general working rooms occupy the two upper floors. The club's membership is large and is constantly increasing.

The Newark Camera Club.—The club was organized by thirteen Newarkers in 1888, and has since grown to a membership of sixty-five, all adults and nearly all active in photography. Among the members are a number of thoroughly scientific investigators, notably Professor Edward Weston, the electrician, Charles Leroy, T. A. and C. G. Hine, W. A. Halsey, Paul Thiery, and G. C. Gilmore. The club is represented in the American Conference and the Lantern-Slide Exchange. The club gives two public exhibitions of lantern

slides every year, and during the winter smaller exhibitions are held in the club rooms twice a month for the benefit of members and such friends as they may invite. The club has gained a great reputation for the variety and excellence of its slides. During the month of October a print exhibition is to be held. The canal trip which the club made early in September was the most enjoyable of the outings that the club has taken in its four years of existence. It was the third and longest canal trip made by the club. Fourteen members started from Easton, on a handy little barge belonging to the Morris Canal Company. The route was down the Delaware Division of the Pennsylvania Canal, following the beautiful Delaware through the picturesque scenery of Northampton and Bucks counties. The canal is shadowed by lofty cliffs of red sandstone through a great part of the way, and waterfalls are a prominent feature of the landscape. The party spent one night at Frenchtown, where four members joined the party. Next day was consumed in running from Frenchtown to Taylorsville, where the mules were bid farewell, and the party crossed the Delaware at the place where Washington crossed some years ago. Washington crossed in a boat and the members of the Camera Club crossed in a covered wagon in a pelting storm. They took the train from Trenton, where four more recruits were picked up. On another day the party embarked in a steam yacht belonging to Colonel A. R. Kuser, and after a run down the river to Bordentown, entered the Delaware and Raritan Canal and journeyed to Bound Brook, where the excursion ended. Over five hundred plates were exposed by the twenty men with cameras. Messrs. T. A. and C. G. Hine, who are great on composition pictures, immediately began the construction of a handsome album, which was finished and presented to William A. Halsey, who engineered the excursion and carried it to a successful finish.

THE NEW ENGLAND LANTERN SLIDE EXCHANGE.

A meeting of clubs representing the New England Lantern-Slide Exchange was held at the rooms of the Providence Camera Club, Providence, R. I., Monday, September 7, 1891. Mr. Leshure, of Springfield, was made chairman and Mr. Fuller, of Providence, acted as secretary. The Mystic, Portland, Springfield, Hartford, and Providence societies were represented. The report of the secretary of last year was given by Mr. Fuller, showing what improvements had been made over the previous season and favoring the continuation of this pleasant exchange as heretofore. The report included the numbers of the slides selected by the different clubs as follows:

8 clubs report on Mystic,	Nos.	32	40	15	23	42		
7 " " Lynn,		18	3	5	46	10		
5 " " Lowell,		36	48	23	42	45		
6 " " Springfield,		50	20	26	7	16	18	49
8 " " Waterbury,		32	3	28	33	2	25	35
8 " " New Britain,		22	20	10	39	13		
8 " " Hartford,		18	30	35	48	20	21	
7 " " Providence,		16	30	6	9	10	29	40
9 " " Boston,		49	9	38	8	12		
4 " " Portland,		2	7	18	31	46		

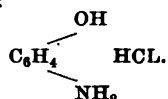
The treasurer's report shows a balance on hand of \$10.11 with the yearly dues of one club yet unpaid. The report was accepted. The rules that have governed the Exchange of 1890-91 were discussed and, after some slight changes, were adopted for the present season.

Mr. Eddy, of the Mystic Club, spoke of the benefit of this Exchange to the slide makers of his society, and also of the pleasant entertainments the different sets had furnished to their meetings. He thought the Exchange had been carried on very satisfactorily last year and moved that the Providence Camera Club continue to act as secretary for this season. It was so voted. The finances were then considered and it was voted that the assessment for the coming year be \$2.00. After discussing general matters in regard to this Exchange, and lantern-slide making, the meeting adjourned.

The Chautauqua School of Photography.—This institution, under the guidance of Dr. Charles Ehrmann, has been very successful. At the annual meeting held early in September at Chautauqua the reports presented show that the institution is accomplishing a great deal

of work. During the year instruction was given to four classes—the corresponding class, practicing class, at the Assembly grounds; the local class, in this city; and the post-graduate class. In all, 145 students derived benefit from the school. Sixty-eight of them were women. Of the 145, 91 were strictly amateurs. In the subordinate classes there were practical exercises in studio and field, photo-micrography study, and the recovery of precious metals from waste solution, while the more advanced class studied the chemistry of silver compounds and emulsion processes, the non-metallic bodies, and photo-chemical and photo-physical changes. In his address to the graduating class President J. T. Edwards said: "Professor Draper, of New York, was the first in this country to give us photographic portraits. During recent years an astonishing advance has been made in the application of this beautiful art. The dry plate and instantaneous impression now give the lover of nature opportunity to secure not only form and shading, but motion, and have made possible to the amateur what was before only attainable by the professional. Photography has become the most important ally of the engraver, and in another department, photo-engraving, borrowing once more from the chemists's knowledge, secures without the engraver's skill a result which at little expense rivals the best work of a Sartain or a Ritchie. When photography shall have made possible the transference of color by the sunbeam, it will produce pictures the beauty of which will defy the highest skill of the painter, and prove that the sun is indeed the greatest of all artists. When this is accomplished it will probably be done by a careful application of the law of complementary colors and a study as to the relations of surfaces to the absorption of light. Investigation now points to the possible identity of light and electricity, and as the storage of electricity is but a question of the near future, who shall say that the dream of the chemist in 'Gulliver's Travels' may not be realized with a slight modification. He was trying to extract sunbeams from cucumbers, which were to be placed in vials hermetically sealed and preserved for use in raw, dark, and inclement weather. The photographer armed with dry plates and stored sunshine would indeed be well equipped."

The Society of Amateur Photographers of New York.—The season opened on Tuesday evening, September 8th, with the regular monthly meeting; President James H. Stebbins, Jr., in the chair. He read a technical paper on a new developer compound, "Para-amidophenol and its Preparation" (see page 384). It is a derivative from benzine and a compound that had been known for some time but had only recently been thought of as applicable as a developer for dry plates. He explained two or three different ways by which it could be made, and recommended the process in which tin was used as producing the strongest reducing compound. He exhibited a sample and remarked that the great difficulty in preparing it was the thorough elimination of the tin precipitate. This required much time and was tedious. It took a week for him to make half an ounce. The hydrochloride of para-amidophenol was the name of the tin salt which gave the best results, and the following is the chemical formula:



The salt is soluble in the proportion of 1 part in 4.10 parts of water, and 1 to 10 of alcohol. It is of a slight brownish color. The formula for the developer advised is:

Water,	1000 parts.
Sodium sulphite,	50 parts.
Caustic soda,	5 parts.
Para-amidophenol hydrochloride,	5 parts.

He had not tried the prepared salt yet in the development of plates, but hoped to do so before the next meeting.

He was followed by Miss Catherine Weed Barnes, who read an entertaining paper on "The Buffalo Convention and its Lessons" (see page 393).

Mr. Cyrus Prosch exhibited his improved flash lamp having a reservoir of magnesium arranged near the flame, over the supply pipe. By blowing through the latter the magnesium powder above it is carried along and projected upward in a fan shape into an oblong

shaped flame of alcohol and thoroughly burned. The magnesium falls by gravity from the reservoir into the supply tube as rapidly as it is blown upward, thus making a continual stream. Mr. Prosch explained that the magnesium powder should be perfectly dry before being placed in the reservoir. He exhibited its practical working and several specimen photographs that had been made with it.

Mr. J. H. Markley showed a model of his portable dark-room that could be quickly set up in the field or a room. It was compact, light (weighing but thirty pounds), and provided with reservoirs for water, shelves, and a non-actinic window. He also exhibited his new tourist magazine hand camera, which had a simple arrangement for transferring exposed plates from one compartment to another, also a device for indicating the number of plates exposed. A third device was his focusing screen attachment for cameras. A mirror suitably adjusted at an angle of 45 degrees is placed back of the ground glass. A black cloth cover protects the space at the top, it only being necessary to look through a small aperture in it at the top to observe the image in the right position on the mirror. One advantage is that on a breezy day there is no focusing cloth to be blown about; another is, the image looks right side up.

There being no further business the meeting adjourned.

Smoking Concert, Saturday Evening, September 19th.—The concert was a very successful and entertaining affair. An exhibition of selected lantern slides, presided over by Mr. William M. Murray, began the evening, being followed by songs and recitations by Mr. Burt Andrews, Mr. Daly, and Mr. Hill, while the piano was played by Mr. Keller. The Long Island farmer poet, Mr. Bloodgood Cutter, also amused the audience with a special poem for the occasion. A substantial entertainment for the inner man was served in the work-room of the society. It was regarded as one of the best concerts ever given and was largely attended. Mr. T. J. Burton, Mr. E. Warrin, and F. Vilmar were the committee having charge of the arrangements.

Exhibition of Lantern Slides, Friday Evening, September 25th.—The exhibition consisted of 152 selected foreign slides by English amateurs, a majority of which belonged to the prize set of the English journal *Photography*. They embraced a great variety of subjects by such well-known men as Paul Lange, A. R. Dresser, G. E. Thompson, E. Beck, F. W. Muncey, A. A. Carnell, F. Riley, George Lockyer, A. C. Edwards, A. Watson, J. T. Bright, K. L. Reynolds, J. Robson, N. B. Sutton, Geo. W. Wilson, and Edgar G. Lee. Mr. William M. Murray acted as lecturer and gave much useful information in explaining the views. Mr. Dresser's surf was much liked, as was also Mr. Lee's "Feeding the Pigeons," "The Silent Mill," "Waiting for the Boats," and "Holiday Time." Where so many were good it is difficult to particularize. A slide of a "Japanese Eagle Owl," by K. L. Reynolds, was remarkable, the detail in each feather coming out with unusual clearness.

A new tracing paper screen has been put in position for the season and a pair of gas regulators, presented to the society by Mr. E. Warrin, have been attached to the cylinders for the purpose of supplying a uniform pressure to the burner. They have effected a great saving of the gas, and aid in giving on the screen a very uniform light. Many new applications for membership have been made and there is quite a waiting list of members desiring to rent lockers.

The society's exhibition at the American Institute Fair began on October 1st. There were between thirty and forty exhibitors, and a nicely-printed catalogue was gotten up.

On October 3d quite a company of members were booked to go on a field excursion to Connaugh, Catskill Mountains, N. Y., for a day and a half outing, in connection with members of the Newark Camera Club, Brooklyn Academy of Photography, Yonkers Camera Club, and Hoboken Camera Club. A pleasant time was anticipated.

The Jersey City Athletic Club Camera Club.—From the club's journal, *The Outlook*, we take the following account of the organization of this new club: "The Camera Club was organized at a meeting called for that purpose on Wednesday evening, July 22d, and the following officers elected: Mr. F. L. Clark, Chairman; Mr. G. C. Thomiar, Secretary; Executive Committee, Messrs. F. L. Clark, G. C. Thomiar, H. C. Nichols, Floyd Vail, and Jos. P. Gieves, Jr. We now have twenty-three members, and trust all those interested in photography will hand their names to the executive committee for enrollment. Application has

been made to the club for a dark-room and appreciating the hearty co-operation of the Trustees, in everything tending to increase interest in the club, we feel assured that the facilities furnished us will be the best and most complete that can be had. Several photographic trips have already been made by our 'Camera fiends,' and many more will be arranged before the winter season. A full account of these outings will appear in the *Outlook* from time to time. Arrangements are now under way for an exhibition of the members' work, and as prizes will be awarded to the best pictures in each class, we will doubtless have a fine collection of artistic work. One of the principal features for next season will be the lantern-slide exhibitions, at which will be shown slides made by the members, as well as those from the American Lantern-Slide Interchange, of which we expect to become members."

The Camera Club of Rochester, N. Y., met for the first time after a vacation of two months on Friday evening, September 4th. The president, Mr. G. Hanmer Croughton read a paper, and gave a demonstration of developing platinum prints, both in black and sepia. The members were delighted with the simplicity and beauty of the process, and in consequence of the few members present it was decided to repeat the demonstration at the next meeting, which was done on the evening of Friday, September 18th. This club devoted the first part of the year to demonstrations illustrating the action of the light upon the sensitive plate and its developments, and now the printing processes are to be illustrated by practical demonstration.

A NEW DODGE TO OBTAIN PHOTOGRAPHIC APPARATUS.

The notice sent us below by the Chief of Police of Newport, R. I., together with the letter by Mr. Mayer, explains a simple but new dodge, so far as photographic apparatus is concerned, for getting goods without paying for them. We caution dealers who undertake this kind of business to be sure and send a trusty messenger with the goods—a customary rule of jewelers.

To the Editors of the American Amateur Photographer :

NOTICE.—Newport, R. I., September 14, 1891.—Stolen from Newport, R. I., on the afternoon of September 10, 1891, two Kodak cameras described as follows: one No. 4 size, numbered 9,052, and the other, No. 5 F size, numbered 6,174. Stolen by a man near 40 years of age, about 5 feet 8 or 9 inches in height, thinish face, slim built, weight about 150 lbs., fair complexion, sandy hair, blonde moustache and small side taps, wore spectacles (probably for the occasion), good talker, had on dark clothes and derby hat, had every appearance of a gentleman. Arrest thief if found, and any information received of the articles indicated please notify Henry E. Turner, Jr., Chief of Police, Newport, R. I.

NEWPORT, R. I., September 16, 1891.

To the Editors of the American Amateur Photographer :

Gentlemen,—Please call the attention of the readers of your magazine to notice sent out by the Chief of Police of this city in regard to the stolen Kodaks. Other firms have notified us that they have been victimized in the same manner, and, from general appearance, by the same man, who is evidently making a specialty of Kodak cameras. He works the business by asking you to send (generally two) cameras to his hotel to show lady friends. On arrival, he finds they are getting dresses fitted on, so he takes up one camera which they always like very much. After he takes up second one he gets, and that is the last you see of him. A general outline of the case might be of some use to your readers, as he is more than likely to call on some of them in his travels.

Yours respectfully,

JOSEPH MAYER,

Dealer in Photographic Materials and Apparatus, 70 Spring Street.

FRIENDLY WORDS.

We are in receipt of, and the club library table is enriched by, a little magazine called the AMERICAN AMATEUR PHOTOGRAPHER. It is an illustrated monthly, devoted to amateur photography in all its phases and developments, and as such should be in the posses-

sion of every handler of that magic little box, yecept the Camera. The writer of this is not one of the "fiends" as yet, nor can he lay claim to any special knowledge of the subject, but in glancing over the pages of this magazine, he arrives at the conclusion that for those who like this sort of thing it is just the sort of thing they will like. It is, we believe, the only publication devoted to the interests of the amateur photographer which is not connected with some manufacturer of, or dealer in, photographic goods, and on that account, if no other, it should be read not only by the "members of the guild," but by every club man interested in the beauties of the photograph.—*The Outlook of Jersey City Athletic Club.*

BOOKS AND EXCHANGES.

Catalogue of the *Third International Belgium Exhibition of Photographs*, paper cover, 75 pages and supplement, has been sent to us by Mr. Charles Simpson and has the names of the exhibitors arranged under alphabetical letters, as well as giving numbers to each. There were 149 regular exhibitors, with the names of 15 more in a supplement to the catalogue. The only American exhibitor was Mr. Alfred Stieglitz, of New York, who sent several platinotypes. The exhibition was held during the meeting of the International Photographic Congress at Brussels in August. The catalogue is gotten up by the Belgian Photographic Association.

DIE PHOTOGRAPHISCHEN OBJECTIVE, IHRE EIGENSCHAFTEN AND PRUFUNG (Photographic Objectives), by Dr. Josef Marie Eder. Published by Wilhelm Knapp, Halle A. S., Vienna, Austria. Paper, 273 pp. Price, \$1.75.

This is the fourth part of Dr. Eder's "Hand-Book on Photography." It contains three full-page photogravure illustrations of such noted lens makers as Stienheil, Voigtländer, and Joseph Petzval; the latter may be said to be the father of photographic lenses. The book treats the subject in seventeen chapters, contains copious illustrations, and many formulas and tables for all kinds and qualities of lenses. To those photographers who understand the German language it will be invaluable.

"A Study in Black," by Clarence B. Moore, in *Outing* for October, will please and instruct every amateur photographer. The illustrations are gems. Mr. Moore closes his article with this advice: "And now just a few words of advice to those intending to visit the land of flowers, where, by the way, in the winter at least, flowers are seldom seen. Take your camera. Develop after each day's exposures. The necessary articles can be packed into really a very small space, and the results of the day's work should be known at once, so that errors in timing and developing may be rectified, possible leakage of light in the camera or holders noticed and overcome and movement on the part of the sitters discovered before it is too late to secure a repetition of the pose. Dry your negatives on a rack, the feet of which rest in saucers of waters, for Florida teems with roaches and ants, to which the damp film is a dainty banquet. Never use a tray for the hypo; particles of dirt settle in the film, which at the South is especially soft. Use a grooved box in which a number of plates can be fixed at once and all foreign matter sinks to the bottom. And, lastly, do not confine yourself to landscapes, as do nine out of ten among amateurs. Go around in the colored quarters. Mingle with the people there; they are kind and simple hearted and, believe me, you will never regret the pains you have taken, and will ever remember with pleasure your winter's 'Study in Black.'"



PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our reader, to whom timely notice of novelties may be valuable.]

A NEW ARISTOTYPE COMPANY.—We have lately tried samples of ready-sensitized paper made by a new company, called New York Aristotype Company, established in New York City, at 28 Elm Street, which gave very satisfactory result. The paper tones quickly and prints about as rapidly as ordinary silvered paper, and besides possesses good keeping qualities.

As will be noticed in our advertising pages Messrs. Anthony & Co., of this city, have become the agents of the American Aristotype Co.'s paper which has become so popular with many photographers.

These companies, together with Bradfisch & Hopkins, manufacturers of the well-known Omega paper, Mr. A. M. Brown, of Rochester, N. Y., Mr. John Haworth, of Philadelphia, Penn., and Hope's aristotype paper, made in Chicago, show that the users of the silver bath and ordinary silvered paper are decreasing. The aristotype paper has the merit of bringing to the surface the finest detail as perfectly as if the picture was on glass, looked at as a transparency, besides being susceptible to nearly every variety of tone or color. It is a growing industry, and supplies a want which every amateur will appreciate.

ANTHONY'S INTERNATIONAL ANNUAL, 1891.—In noticing this annual, on page 280 of the July number, we stated that we would send a copy to all new subscribers free, when they so desired it. But we are informed that the price in paper covers is 75 cents, instead of 50 cents. New subscribers now sending \$2.25 will have the privilege of getting a copy of the annual free.

PHOTOGRAPHIC DISPLAY.—A fine collection of pictures on exhibition in Detroit.—Says the *Detroit Journal*, of September 22, 1891: "An interesting collection of high-class photographs may be seen until to-morrow evening at 166 Griswold Street. They are by eminent photographers of the country, and it is flattering to this city to discover that two well-known Detroiters, Philbric and McMichael, are among the contributors. The display is made by the G. Cramer Dry Plate Company, of St. Louis, Mo., and W. C. Paul is on hand as demonstrator. These pictures were at the recent international exhibition in Buffalo and drew nine of the prizes. Three-fourths of all the prizes were taken by photos from the Cramer dry plates. Among the pictures are samples of the work done with isochromatic plates, recently invented, which by their greater fidelity to the colors add accuracy of effect not obtainable under the old process by which yellow became black, and blue, white.

CARBUTT'S ORTHOCHROMATIC PLATES.—No better way of showing the value of these plates for landscape work can be devised than by submitting copies from actual negatives. This Mr. Carbutt has lately done by sending out a handsome mounted aristotype print from a 5 x 7 negative in which the natural clouds and foliage appear to excellent advantage. Aristotype paper and orthochromatic plates are the important improvements in photography.

United States Photographic Patents

Issued in September, 1891.

September 1st.

- 458,663—Manufacture of Flexible Photographic Films; H. M. Reichenbach and S. C. Pasant, Rochester, N. Y.
- 458,699—Photographic Apparatus; H. Thümler, Berlin, Germany.
- 458,907—Magazine plate Holder for Photographic Apparatus; E. Kipper, Adams, Mass., and E. W. Perry, Jr., New York.
- 458,979—Plate Holder for Photographic Apparatus; E. W. Perry, Jr., New York, N. Y.
- 458,980—Exposing and Shifting Photographic Plates or Films; E. W. Perry, Jr., New York.
- 458,981—Photographic Apparatus; E. W. Perry, Jr., New York, N. Y.

September 15th.

- 459,411—Automatic Registering Photographic Apparatus; E. E. Moore, Syracuse, N. Y.

September 22d.

- 459,938—Photographic Vignetting Attachment; G. H. Richards, Philadelphia, Pa.
- 460,099—Camera; F. A. Hetherington, Indianapolis, Ind.

September 29th.

- 460,337—Flash Torch for Photographers; M. R. Hemperly, Philadelphia, Pa.
- 460,417—Solar Camera; F. T. Wilson, Stillwater, Minn.



CATHERINE WEED BARNES.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III.

NEW YORK, NOVEMBER, 1891.

No. 11.

Our Illustration.

FORMING one of a set of illustrations, accompanying Mr. Frederick K. Morrill's account of the ladies of the Chicago Camera Club, who are credited with being among its most active forces, we present an excellent likeness of Miss Barnes, taken in her own studio by a professional friend. She had the pleasure of being elected an honorary member of the club soon after its organization. Probably no other woman has been more active in promoting a general interest in photography than Miss Barnes, a fact which, doubtless, accounts for her many pleasant receptions by the various clubs throughout the country. Her example, in working for the general good of the photographic public, is one to be commended.

The Ladies of the Chicago Camera Club.

BY FREDERICK K. MORRILL.

THE LADIES of Chicago were among the first to take up photography as a pastime, and from an amusement, with many of them, it has gradually developed into an art. Accordingly, when the project of organizing a camera club in this city was first advanced, it was but natural that we should look to them for substantial aid and assistance in its formation. The result is that they have always been represented in the directory of the club and have been among the most energetic and capable of its officers, while their interest in the meetings, outings, and exhibitions has never waned.

One reason for this, perhaps, has been the equipment of the club, which embraces a complete and elaborate studio, with all of the necessary furnishings and accessories. We have always noticed that lady amateurs are more

interested, generally speaking, in work adapted to the studio, than in viewing, and of course, where they have the facilities, they would naturally be attracted.

There are many photographic societies which deny to women the right of membership. In the organization of the Chicago club such a rule was never even suggested, and from the first they have been admitted to active membership and elected to various offices. There is also a rule, which provides that the ladies of the families of members may be admitted to the privileges of the club as associate members, at half rates. This arrangement is quite popular and is taken advantage of by many.



MRS. N. GRAY BARTLETT.

The club has several honorary members, and among them is one lady, with whose work, both artistic and literary, the readers of this magazine are familiar. I refer to Miss Catherine Weed Barnes. After the publication of an essay by her, favoring the admission of women to photographic societies, which attracted general attention, she was placed upon our honorary list, and we have never had reason to regret the move, for the great interest

which she takes in our society is well shown by the many beautiful specimens of her work which ornament the walls of our club rooms.

No mention of the Chicago Camera Club would be complete without the name of Mrs. N. Gray Bartlett. She was one of the first of Chicago ladies to become interested in the art-science of photography and has retained her interest undiminished to the present. She is the wife of a well-known chemist and aided by him she delights in experimenting with new processes and new effects. She excels in groupings of children and genre work, and many of her pictures have illustrated our leading magazines and have been



MRS. D. M. STEVENSON.

on exhibition upon various notable occasions. At the recent exhibition of the European photographic societies, held at Vienna, her work attracted much attention and received one of the highest awards. Mrs. Bartlett has an interesting family, among which is little John. He is the most extensively photographed boy of our acquaintance, and his good looks were the cause of a great deal of trouble to him, for he was everlastingly posed as a model.

We understand that it was a great day of rejoicing with him when he was shorn of his blonde curls and began to shed his first front teeth for this put an end to his posing for any more Fauntleroy pictures. Mrs. Bartlett's specialty is cold-water platinum prints, and she generally prepares and coats her own paper, using the most delicate Japanese and plate papers, and lucky are those of her friends who are presented with these beautiful specimens.

Mrs. D. M. Stevenson was the president of the original and only "Ladies' Photographic Club" of Chicago until it was absorbed by the camera club. She is an enthusiastic amateur and devotes a great deal of time to photographic work, being often found in the club's rooms, but doing the greater part of her work at home, where she has quite a little studio fitted up in one of her north rooms. This is where she loves to get her young lady friends before her camera, and many are the beautiful poses and costumes which have there been portrayed and perpetuated. She is generally satisfied with making the negatives, leaving the printing to some one else. In appearance, Mrs. Stevenson is quite striking, her hair being of a silvery gray and in decided contrast to her youthful face and figure. She has lately taken up the work of illustrating poems with original photographs and has made some very beautiful specimens.

Mrs. H. N. May was the vice-president of the club at its organization and aided materially in its successful formation, her social influence and personal efforts bringing us many very desirable members. Mrs. May is a typical Chicago woman and decidedly bright and interesting. She recently evolved a plan for connecting the north and south boulevard systems of Chicago by means of a tunnel beneath the river. The various drawings and calculations, made by herself, were given great prominence and endorsement by the daily press and various leading clubs, and there is a likelihood of their being permanently adopted. At a recent afternoon reception given at her residence the lady guests were grouped and photographed by flash-light as they entered, making a very interesting collection.

Mrs. P. B. Weare is often found at work in the dark-rooms and while a director of the club rendered it a great deal of valuable service. She is responsible for the romance of the camera club, for one day her daughter Nellie accompanied her and under the skylight in the studio met Mr. Webster, a young gentleman member. It was a case of love at first sight, and Mr. Webster, who had formerly devoted his time to the fickle Kodak, henceforth began to produce the most marvelous transparencies, enlargements, and transferotypes, all of the same subject. The result was inevitable. Love-making through a lens proved irresistible and last June their wedding bells rang merrily.

Mrs. A. C. Badger has been a member of the club since its formation and is often found there, generally accompanied by her daughters or grandchildren.

Mrs. Frank Douglas is a member of the board of directors and takes great interest in the club, spending considerable time there at work. She believes in the practical as well as the ornamental side of photography, and her husband being a leading manufacturer of bicycles, the Chicago street cars are at present liberally decorated with advertisements bearing beautifully photographed pictures of "Safeties," which are Mrs. Douglas's own handiwork.



MRS. H. N. MAY.

Miss Grace Temple was one of the original incorporators of the club and her work shows her great proficiency. She recently completed a European trip with her camera, and the result was shown at one of our meetings in the shape of a collection of lantern views which attracted a great deal of attention.

Mrs. A. C. McClurg, the wife of the noted publisher, is an ex-vice-president of the club and an enthusiastic amateur photographer. She has made many beautiful views in and about Chicago, and at her country house at Elmhurst.

Mrs. James W. Scott is the wife of the publisher of the *Chicago Daily Herald*, and the present vice-president of the club. She is well known in society and gets a great deal of enjoyment from her camera.

Mrs. George F. Shears is a more recent acquisition to our ranks, but none the less proficient. Her husband is one of Chicago's most skillful surgeons, and she, too, is a graduate of a medical college. It is said that she first became interested in photography so as to aid the doctor in his work, and make pictures of his interesting cases and operations for the medical journals. She was recently experimenting with flash powder, when the whole package became accidentally ignited and at first it was feared that she was seriously injured, but fortunately escaped with the temporary loss of bangs and eyebrows.

Miss Josephine B. Putnam strolled into the club rooms one day and announced to the writer that she had been presented with a camera for a birthday gift, and wished to join the club in order to learn how to use it. She was an apt pupil and an enthusiastic one. She is the present librarian of the society, and can be found almost daily engaged upon the exacting duties of her office or at work in the studio or dark-rooms. Being of a good-natured disposition she is often called upon to assist in experimental work, and recently remarked that when the club procured a new lens, or background, or a sample plate, the president generally "tried it on her" first.

Miss Louise Herrick enjoys the distinction of having been the first member who used the dark-rooms of the club. She has recently returned from an extensive foreign trip and, we understand, secured many beautiful views of Egypt and the Nile country.

Mrs. John Leeming is another of our brides, as Miss Margaret Sibley she rendered valuable service last year as a member of the executive committee. Mrs. Sheridan Badger, Mrs. Edward Henning, Mrs. A. T. H. Brower, Mrs. J. N. Buchanan, Mrs. Wm. Hale Thompson, Mrs. John F. Steward, Mrs. George F. Fiske, Miss Adèle Matthiessen, Mrs. Charles Mackie, Mrs. F. N. Marshall, Mrs. J. H. Moore, and Mrs. H. Harshman, are all enthusiastic camera workers and more or less frequent attendants at the club and its meetings.

In conclusion it is no more than just to state that the ladies of the Chicago Camera Club are entitled to a full share of credit, for their work and influence have always contributed materially to its success, and their wisdom aided in its counsels from the first organization.



Collodion-Chloride Printing Paper.

A PRACTICAL PROCESS DESCRIBED BY A PRACTICAL WORKER.

WE FIND in our foreign contemporary, *Photography*, by Mr. Walter E. Woodbury, a detailed description of this paper and how it can be easily made, which we take pleasure in presenting to our readers. He says: The fact that collodion is gradually but surely superseding albumen for the basis, as it were, to contain the silver salts used in positive printing is becoming more and more apparent. Perhaps in England the change will be slowly accomplished, but it is a fact that abroad they are making far more rapid strides ahead. With regard to the subject under discussion, perhaps America and Germany have made the most progress. Many photographers will have seen and admired the admirable Aristotype pictures produced as supplements to the "International Annual," and elsewhere. Aristotype is but another name for positive printing in which the albumen is substituted by collodion. The advantages the latter possesses over albumen are manifold, and the whole process of preparing the paper, printing, toning to the finished print are much simpler details, giving better and more permanent results (I say more permanent advisedly, but of that more later on). One of the chief reasons of its simplicity lies in the preparation of the paper. In the preparation of albumenized paper, sensitizing, etc., several operations are necessary, with collodion only one. The time occupied in coating a sheet of paper with the sensitized collodion emulsion is less than required to sensitize a sheet of albumenized paper in the silver bath.

Having had considerable experience in the manufacture of collodion emulsion paper for positive printing, I am enabled to give to my readers instructions how to manufacture the same; they will also have the benefit of the knowledge that I have gained by experience.

I would advise all who are desirous of turning out good work to give it a trial, and they will find it far superior to any process in the market for making superb and highly-finished prints.

Like every other new process, the photographer will have a little difficulty in getting used to the working of it, but careful attention to the following instructions, which are rendered as clear and concise as possible, will, no doubt, be of great assistance, and enable him to get first-class results.

I have referred to this process as a new one; this is, perhaps wrong. I should explain that the process is a very old one, but only within the present year has it been brought to anything like a state of perfection. It will, however, be new to a great many professionals and amateurs.

We are aware that the ordinary method of positive printing is based upon the combination of chloride with silver nitrate, forming a sensitive compound chloride of silver. With albumenized paper the albumen is charged with the

salts, and the silver afterwards allowed to soak in by floating the paper in the silver bath. With collodio-chloride emulsion, however, the principle is somewhat different. The collodion is charged with the salts, and the silver afterwards added. This forms the sensitive chloride of silver, the particles being kept suspended by the collodion. The paper is then coated with the sensitive emulsion.

The following method of making the collodion is one that I have found most satisfactory. Besides this I will give two other formulæ, Liesegang's and Hiederstadt's, which the student can try, if so disposed, or if the following does not answer his expectation.

We require first a plain collodion. This is best prepared by mixing equal parts of ether and alcohol, and adding two or three per cent. of English pyroxline. Now the thickness of this collodion is a very important matter. I would recommend a two per cent. in the summer and three per cent. in the winter. A thin collodion is always better to work with; it gives an even film, and if sufficient density is lacking it is a very simple matter to coat the paper a second time, or it can be allowed to remain longer on the paper before pouring off the superfluous quantity. If, however, a thick collodion is used, all manner of evils arise. The film is likely to be thicker in some parts than others, which would be at once seen in the toning, as the thinner parts would soon become acted upon by the gold bath, leaving the thicker portions quite red.

Collodion, like wine, improves by keeping. An old collodion that has been allowed to stand some time is always superior to one freshly made, for the reason that it is more perfectly combined, and all sediment and foreign matter having fallen to the bottom, it is much clearer and cleaner. Therefore it is advisable to make the collodion some time previous to use, and after carefully decanting it without disturbing the sediment at the bottom of the bottle, add about one-half per cent. of castor oil. The addition of this small quantity of castor oil makes a wonderful difference in the glaze of the finished picture, while materially assisting the toning.

The collodion being ready, we take a glass measure capable of holding about 100 cubic centimetres.* Into this place 13 grammes of nitrate of silver and 15 cubic centimetres of water. Thoroughly dissolve the silver, and add 50 c.c. † of alcohol, the addition to be made slowly. Into another small measuring glass we dissolve 3 gr. of citric acid in 50 c.c. of alcohol, and in another 3 gr. of chloride of strontium are dissolved in 50 c.c. of alcohol. Instead

* It will be noticed that the French metrical system of measurement is adopted. This system is far and away the best, and so superior to our own confusing method that I should like to see it universally adopted.

† For abbreviation, c.c. stands for cubic centimetres, and gr. for grammes (not grains). Those accustomed to the French metric system should read the amounts as parts, thus—13 parts of nitrate of silver and 15 parts of water.

of chloride of strontium, many other chloride compounds have been recommended, and may be employed, all varying in their effects. The principal advantage gained by the use of chloride of strontium lies in the color of the print; when toned with this emulsion it is possible to get those rich purplish-brown tints, so much admired.

We have now four vessels, containing respectively the collodion, the silver solution, the citric acid solution, and the strontium chloride solution. The next operation, when all the ingredients are thoroughly dissolved, is to add the citric acid solution to the strontium solution, and after stirring well together, place in another vessel containing 100 c.c. of the plain collodion.

All the operations already described can be performed in the strong daylight without any injury, but as we are now about to form the sensitive emulsion it will be necessary to remove our solutions, etc., to a room lighted only by a yellow light. Although a moderately non-actinic light is sufficient, it must be noted that the emulsion is more sensitive than sensitized albumen paper. Green cathedral glass will be found the best and most agreeable light to work by.

We have now the collodion containing the acid and the chlorine, and the silver solution. We mix the two together by dropping the silver solution into the collodion, stirring rapidly the whole time. The dropping is better effected by placing the silver solution into an ordinary dropping bottle. Too much care cannot be observed in this portion of the process. It will be noticed that directly the drop of silver solution enters the collodion it takes a white, milky appearance. This is due to the formation of chloride of silver and other compositions, which remain suspended in the collodion. It being very necessary that the silver and chlorine be well distributed and thoroughly combined, the gradual addition of the silver solution and continual and violent stirring during the process is absolutely essential. If this is not observed an unevenness in the prints will be the result.

It must be mentioned that after the addition of the alcohol to the silver solution it very often happens that a portion of the silver crystallizes. As soon as this is observed the vessel containing it must be placed in warm water until the crystals are re-dissolved, when it must be immediately mixed with the collodion after the manner already described.

We have now a sensitive collodion emulsion. It must be well shaken, and allowed to stand for two or three hours. It must now be filtered in an ordinary collodion filter, and is then ready for use—that is to say, for preparing or coating the paper.

Hiederstadt's formula* is as follows: 1.5 gr. of chloride of lithium, 1.5 gr. of nitric acid, are dissolved by the application of heat in 50 c.c. of alcohol; this solution is added to 500 gr. of ordinary 4 per cent. collodion.

* Photographische Correspondenz.

14 gr. of acetate of silver are dissolved with the aid of heat in 6.7 gr. of distilled water, then added to 150 c.c. of diluted alcohol, which is heated to ebullition.

The argentiferous solution is poured gradually into the chloride solution, and afterwards from four to six grains of glycerine solution are added.

Dr. Liesegang prepares his collodion after the manner following :

In a glass measure dissolve 8 gr. of nitrate of silver in 6 c.c. of distilled water, heat being applied. Drop this solution in a bottle containing 135 c.c. of alcohol. In cool weather it is necessary to place the bottle in a vessel containing warm water. Add 8 gr. of soluble gun-cotton, and after a good shaking pour in 160 c.c. of ether. Further violent shaking will produce a grayish-white collodion. In another glass dissolve one gr. of chloride of lithium in 35 c.c. of alcohol, together with one gramme of tartaric acid. This solution is dropped into the argentiferous collodion, which must be kept continually moving. If preserved in a well-corked bottle this collodion will keep any length of time.

We have now our sensitive collodion emulsion standing ready for use, and the next operation is the coating of the paper. We have, therefore, to first of all turn our attention to the kind of paper that we must use. It is a curious but lamentable fact that, notwithstanding the endeavors of many of our leading paper manufacturers in this country, they have been quite unable to produce a paper suitable for photographic purposes. Rives's and Saxe's paper are the only two that are of any use for this, as well as for a great many other purposes. It is very simple to get a paper with a fictitious glaze, produced by hot pressing and other modern appliances, but this will not remain after it has passed through all the various necessary fixing and washing operations.

But even with the two papers already mentioned, although they can be used satisfactorily, yet in order to prevent the collodion from sinking into the paper it is necessary to coat with arrowroot.

The paper most suitable for our purpose is that known abroad as baryta paper. It is used for collotype or lichtdruck prints, and photographers should have no difficulty in obtaining it from any collotype printing works. This paper is made by coating Rives's or Saxe's paper with a solution of baryta chalk and gelatine. It has a pink or violet surface, which not only presents a very pleasing appearance to the finished print, but serves to hide any discoloration due to the deterioration of the collodion emulsion. There are four different qualities of this paper. The first is ordinary paper coated in the manner already mentioned ; the second is a stiffer and stronger paper, resembling thin card-board ; the third is coated with a thick solution of insoluble gelatine, and stripped from glass, presenting a very high polish ; the fourth is similar to the latter, excepting that the gelatine is soluble, and by the application of heat dissolving the gelatine, the collodion film leaves

the paper and can be transferred to another support, after the manner of carbon printing.

For a preliminary trial procure some of the first-mentioned paper. For ordinary purposes it is not necessary to prepare the paper in any way; the keeping properties of the collodion emulsion are excellent, but if necessary to keep several months it should be floated, pink side downwards, on a bath made as follows:

Water,	100 parts.
Hydrochloric acid,	2 "
Citric acid,	2 "
Tartaric acid,	2 "

Allow it to remain on this solution about two minutes, remove, and hang up to dry.

There are several methods of coating the paper with the emulsion. For large quantities a suitable double frame should be constructed, in which the paper is held tight while the collodion is poured over it.

With the collodion emulsion the paper does not expand as it would do with any other preparation.

For our purpose, however, a piece of glass or wooden board of the same size as the paper is all that is necessary. A piece of wood with a knob in the center underneath is the most comfortable to work with. The paper should be pinned on to the wood or fastened on to the glass in such a manner that the right-hand side and the bottom edges overlay about a quarter of an inch.

Hold the bottle containing the emulsion in the right hand and the board with the paper laid on in the left hand. Carefully wipe round the neck and sides of the bottle and see that there are no air bubbles on the emulsion, then pour the collodion on to the right-hand upper edge of the paper. A little practice will soon enable you to judge the right quantity, but never be too sparing. With a gentle movement incline the board in such a manner that the emulsion flows well into the top left-hand corner, then down towards the bottom left-hand edge, and finally to the right-hand lower corner, where the superfluous collodion is allowed to run off. But have a care; not into the same bottle on any account if you are going to prepare another sheet, but into a separate wide-necked bottle. The bottle used to contain the emulsion for pouring on to the paper should not contain more than six or eight ounces, and should never be filled up farther than a couple of inches below the neck. The best bottles for this purpose I have found to be those used for Hock and Moselle wines. They are usually of a non-actinic color, which is in itself an advantage. But the long, gradual sloping neck prevents the formation of air-bubbles. These latter will be found the chief enemy of the collodion worker, but with care and attention they can easily be got rid of. They are usually formed by pouring the collodion on to the paper at too great a height,

or by bringing the bottle to an upright position with a jerk. All these little details, trifling as they may seem, are of great importance when good results are desired. The collodion must never be allowed to flow twice over the same spot during the one coating, or an unpleasant ridge visible in the finished print will be the inevitable result.

Carefully wipe the neck of the bottle each time, to prevent little pieces of the dried collodion from spoiling the film.

For the production of high-class prints it will be advisable to coat the paper twice. This is done when the first coating is thoroughly set. Turn the paper round the other way, so that the bottom and the top are reversed, and give another coating.

The superfluous collodion poured off into the wide-mouthed bottles is allowed to stand until the air-bubbles have entirely disappeared, when it can be used.

Owing to the speedy evaporation of the ether the collodion will soon become too thick. It should be thinned with a mixture of one part alcohol (.805) and two parts ether (.730). Well shake and allow to stand before using.

In pouring off the superfluous collodion from the paper gradually sway the board from right to left, in order to prevent the formation of ridges caused by the running of the collodion in one direction.

The collodion emulsion sets very rapidly, in warm weather about one minute, in winter three to four. When the superfluous collodion has run off, the paper is removed from the frame or support and hung up to dry by means of American clips attached to a string.*

Right here we come to another very important consideration, which must on no account be overlooked. I allude to the temperature in which these various operations of coating and drying are to be carried on. Paper prepared in a moist room and dried slowly gives flat prints, while if dried at too high a temperature will not tone at all.

The coating of the paper should be carried on in a cool, dry atmosphere, the room thoroughly well ventilated, as the fumes of ether and alcohol are exceedingly obnoxious and injurious to the health. Directly the paper is coated it should be taken and hung up in a room heated to about 60° Fahr. After drying, the edges are trimmed with a pair of shears and the paper laid down flat under a heavy weight. It should be well preserved from light and moisture. If rolled with film outwards it can be kept in an air-tight tin case, and when required for use will fall into a flat position if unrolled.

*I once used these American clips on wires running across the drying-room, and found my paper covered with small black specks, which I afterwards found were due to the scraping of the metal joints of the clips along the wires producing fine metallic dust, which, attaching itself to the collodion emulsion, soon turned the silver black. Moral: Use string.

W. E. W.

I trust the reader will forgive me if I have been guilty of tautology or repetition in describing the necessary operations to be gone through in the preparation of aristotype or collodion emulsion paper. I have endeavored to make it as clear as possible, so that the most ignorant person will thoroughly understand it. I have also endeavored to impress upon the mind of the operator the fact that absolute attention to the minutest details is necessary to insure success. Having had occasion to prepare many thousand sheets I know the value of this, and as I am anxious to see this beautiful process more in use I would not like the reader to try it, and, by omitting some trifling detail, get bad results and condemn the whole thing as useless, as a great many are apt to do.

[Any good ready-made American plain collodion, thinned down, will answer.—Eds.]

Need of a Portable Dark-Room.

BY M. Y. BRACH.

A PORTABLE dark-room or dark-box is one of the present needs of amateur photographers. The inventor who will produce such an article that is really practicable and not too expensive, ought to find a ready market for it. There is scarcely a day in the experience of a traveling amateur photographer when a dark-room is not wanted, at least for changing plates. To be sure, many hotels provide well-equipped dark-rooms, but they are few and far between, when taking the country as a whole. The photographer having 4x5 plates to develop requires a very small space in which to manipulate them. The trays are small, but a trifle larger than the plates, and but little room is needed. Two of these trays are all that are actually necessary, unless a third tray, containing water in which to wash off developer is used. It seems not a complex matter to make plans for a dark box, one side of which shall contain a red glass, with short tight fitting rubber sleeves to admit the arms, and goggles for the eyes, the whole to be so compactly arranged as to be placed on a bedroom stand or bureau top. When not in use the box could be so hinged as to fold up like the patent tin lunch boxes, so much used by school boys. The size of this dark-box could be kept within the dimensions of an ordinary family starch-box.

Twenty odd years ago an Englishman manufactured a field dark-room of flexible rubber cloth, upheld by a tripod, with close fitting sleeves, a mask for the face, etc. But it was too cumbersome and costly for general use, and has never appeared in the American market. Other dark-rooms and boxes, but they have been either too unwieldy or too costly. Compactness and cheapness are prime essentials in the making of a portable dark-room or dark developing box.

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EDITORIAL COMMENT.

Do Amateurs help Professionals?—This is a question put in the opposite way. We are inclined to think they do, if the professionals can see the question in the right light. Mr. Frank M. Suttcliffe, in a recent number of *Photography*, gives a hint of how professionals may profit at the expense of amateurs, which is worth consideration. He says: "Of all classes of photographers the amateur seems to have trodden most heavily on the toes of those who made the photographing of houses and groups their specialty, for we hear of men who, a few years ago, were making a comfortable living, now literally never being asked to do any work, and who have to depend entirely on orders from work taken on speculation; even those who do not depend altogether on this class of work must have noticed a great falling off in this line. And even when a commission does come, in all probability a telegram will meet the operator as he is starting off to say that some amateur has kindly offered to take the picture, and Mr. X.'s services will not be required, though what pleasure the amateur derives from doing the photographer out of his work is not easy to see. If he wishes to exhibit his

superior skill, why does not he lie close, let the miserable professional take his group, and then burst forth, rearrange the group, take his exposures, and then, with the generosity of a conqueror, give the poor beaten photographer his negatives to print from? That he should be so anxious to push the professional out of the group and house business for the sake of the few shillings he sometimes condescends to accept is beyond belief. We have heard that 'evil is wrought for want of thought,' and perhaps these gentry have never thought that what is fun to them is starvation, if not death, to the poor professional.

"As far as portraiture goes, the amateur has, we are afraid, done the photographer serious injury. Not that he has competed or undersold him; but by experimenting on his own relations and friends, has produced such caricatures of their features that they hesitate to come to our studios. And worse than this, the amateur has, by excusing his own failures, given people to understand that plates are only a penny each, and that enough paper to print a dozen cartes can be bought for less than sixpence. No wonder, then, portraitists are looked upon as rogues and swindlers for charging more than this, that they may be able to pay for such little items as rent, wages, mounts, etc.

"It is only natural that the photographer should wish to pay the amateur back in his own coin for having taken the gilt off his gingerbread, and it seems as if the increasing craze for snap-shooting gives him the opportunity for so doing. The amateur of the near future will not bother his head with developing and printing nor enlarging. Unlike his brother of the past he will not want five shillings worth of information with every box of plates he buys from us. No, he will be willing to purchase his hand cameras and plates from us, and when he has exposed the latter, will return them to be developed and printed, and, judging from the experience of some who have laid themselves out already for this, the remuneration is a handsome one, for what with the charge for developing, the charge for printing and mounting, to say nothing of enlarging and lantern slides, the amount of work and its accompanying pay these Kodak men put into the hands of those who bring their works to light is far larger than many imagine. During the present depression among photographers many must have sought earnestly for some other employment to which they could turn their hands, with but sorry success; if nothing better turns up, we would say, clear out from your windows the enlargements and portraits the passers-by are tired of seeing, fill it with instantaneous shutters, plates, and hand cameras, and invite the amateur in."

The gist of his essay is that the professional photographer may make money out of the amateur by going into the sale of apparatus, and we think it is about so, judging from the numerous small photo-supply stores that are beginning to start up. Any photographer generally has room enough for the storage of a few pieces of apparatus, shutters, etc., sufficient to meet

the ordinary wants of the amateur. The latter generally has his printing done at the same place, and when he calls for the finished work, has the opportunity to purchase any other needed supplies. Besides this, a good photographer can explain the desirable points of a camera to better advantage than any one else, and can thus employ his time to good advantage when the other branch of the business is slack. Photographers would thus become retail dealers for the wholesale manufacturers, and in the end might realize larger profits than would be possible, should the business be confined to the taking of pictures alone.

Lens and Shutter Contest.—The time for the closing of the Bausch & Lomb contest was extended to November 1st. Some question having occurred as to whether all negatives, good or bad, were to be submitted to the general judges, the company replies that it is only necessary for each contestant to send in one choice negative, though if he desires to enter two or three more of the same kind he will be at liberty to do so. We expect this contest will bring out an excellent lot of negatives, and shall hope to have a reproduction of the prize winner appear in an early number.

A Method of Securing Sepia Tones on Bromide Prints.—The method is a sort of intensification and is recommended by the Eastman Company. The picture may be developed with oxalate and iron, or with eikonogen, or paramidophenol. The print should be well washed after fixing, then immersed in the following:

Potassium ferricyanide (not ferrocyanide),	9 grains.
Uranium nitrate,	8 grains.
Glacial acetic acid,	5 drams.
Water,	16 ounces.

The ferricyanide is first dissolved in the water and after standing a few minutes, add the acetic acid, then the uranium nitrate; filter if any precipitate is formed.

This toning solution should be kept in the dark when not in use. If any precipitate forms during the operation of toning, filter it off, as it will discolor the print. Tone to the desired color and wash in running water for about twenty-five minutes or until the print is clear and free from yellow color. Use rubber trays for the toning solution. Iron or enameled trays are liable to turn the prints blue. Washing the prints before toning in oxalate of potash solution and then in clean water will aid in removing the iron remaining in the paper after developing.

We hope many of our readers will try this formula and report to us the results.



Some Notes on Para-Amidophenol.

BY JAMES H. STEBBINS, JR.

[Read before the Society of Amateur Photographers of New York, October 13, 1891.]

FORMULA.

Para-Amidophenol chloride,	. . . . .	5 parts.
Sodium sulphite (cryst.),	. . . . .	20 parts.
Caustic soda,	. . . . .	15 parts.
Water,	. . . . .	1000 parts.

THE above developer, which I call the normal developer, was used in making the following experiments:

1. Exposed a Carbutt B plate, in contact with a negative, ten seconds, at eight feet from a bat-wing gas burner, and developed with above mixture. The image flashed up immediately, and was thoroughly developed in a few seconds. This proved that the exposure was either too long, or the developer too concentrated.

2. Exposed a Carbutt B plate in the same way to same light for five seconds, and developed as before. In this case, too, the image flashed up almost as soon as the developer was poured upon it, and was fully developed in about a minute. The positive obtained was of fine quality, having a nice soft brown color. This proves that the exposure was about right, but that the developer was much too strong for time-exposure.

3. Diluted the developer with its own volume of water, and used this diluted solution upon another plate which had been exposed, as before, for five seconds.

Even with this dilution the image appeared very quickly, and was thoroughly developed in about a minute and a half.

From these three tests it is evident that para-amidophenol hydrochloride is a very powerful developer, and it is probable that by diluting one part of the concentrated developer with two parts of water, that a sufficiently strong developer for time exposures will result.

PHYSICAL PROPERTIES.

This compound, like pyrogallol, is very readily oxidized in alkaline solutions by the oxygen of the air, and hence I fear that it would be difficult to keep it in a solution containing caustic soda. As soon as the latter is added the mixture turns brownish red, and after developing two or three plates the solution turns dark brown, but, unlike pyro, it does not seem to stain the fingers.

With caustic soda as an alkali, para-amidophenol hydrochloride is at least five times more powerful than eikonogen, and the negatives or positives obtained have that soft, yellowish brown quality which is characteristic of pyrogallol, and which ensures good printing. As it is difficult to keep the

para-amidophenol hydrochloride in one solution like eiko or hydroquinone, I would suggest that it be put up in two separate solutions, as follows :

I.		
Water,	. . . . .	500 parts.
Sulphite soda (cryst.),	. . . . .	20 parts.
Para-amidophenol chloride,	. . . . .	5 parts.
II.		
Water,	. . . . .	500 parts.
Sulphite soda (cryst.),	. . . . .	20 parts.
Caustic soda,	. . . . .	15 parts.

For use mix equal parts of I. and II.

For time exposures dilute the concentrated solution with one or two parts of water as required. For lack of time I have not been able to carry these experiments as far as it was originally intended, but, between now and our next meeting, I intend to extend my experiments into carbonates of sodium and potassium, as alkalis in lieu of caustic soda, and will also read a paper upon the relative reducing power of para-amidophenol chloride upon salts of silver, as compared with pyrogallol, hydroquinone, and eikonogen.

The Para-Amidophenol Developer.

By F. C. BEACH.

IN OUR previous number we gave a method described by Mr. James H. Stebbins, Jr., showing how the base of this developer is made. We now give Mr. Stebbins later experiments, and will describe our own made with a sample handed us by Dr. Charles Ehrmann, of the *Photographic Times*, and said to be made by Dr. Anderson, the originator of eikonogen. On the basis at which a few grains are sold the price is about seven dollars an ounce, but like all new chemicals, the greater the demand the lower the price is likely to be.

We first mixed up a developer, according to the formula advised by Lumiere of Paris, in the following proportions :

Water,	. . . . .	7½ ounces.
Sodium sulphite,	. . . . .	¼ ounce.
Carbonate of potash,	. . . . .	160 grains.
Para-amidophenol,	. . . . .	15 grains.

The water was about 65° F. ; it required a long time to dissolve the salt, which appeared to be the only drawback.

We tried printing a transparency on a moderately rapid plate in contact from a negative, first giving a fraction of a second's exposure to weak daylight ; second, by five seconds' exposure, three feet away from a flat gas light ; third, by a second's exposure four feet away from the same light ; and fourth, by a second's exposure, six feet away.

In the first and second trials the moment the plate touched the developer it darkened over at once completely, the whole of the image being covered

with fog. In the third case a fairly good over-exposed positive was obtained, while the fourth was a trifle under-timed and weak, though remarkably clear in the high lights. The same effect was observed in the development of bromide paper. A fifth and latter experiment with another solution, containing no alkali, on a slow Eastman plate, produced a much better positive.

The conclusion arrived at was that the developer contained too much alkali for time exposures, but might be adapted for those that are instantaneous. At another time we tried dissolving 10 grains of the "Para" salt in five ounces of water, at a temperature of 60° F. After several minutes of rapid stirring with a glass rod only about one-quarter seemed to disappear. We then heated the solution in a water bath until it reached 100 F., and after stirring for five minutes were successful in dissolving it. The solution was now filtered and was as clear and limped as water, having a very slight purplish brown cast by reflected light.

Having been successful in developing plates with simple eikonogen, without the addition of carbonate potash as an alkali, we tried the experiment exposing behind the same negative a slow Eastman transparency plate three feet away from a gas burner for five seconds. We poured over it a solution made as follows :

Water,	5 ounces.
Sodium sulphite,	$\frac{1}{4}$ ounce.
Para-amidophenol,	10 grains.

In about fifteen seconds the image began to appear, and in one and one-half minutes development was complete. On examining the transparency by daylight we found that it could have gained a little more needed density by remaining a few minutes longer in the developer. We recommend the above formula for slide making. It yields clear glass, where needed, in the high-lights of slides, also gives a pleasing purplish tone, and is suitable for over-exposed plates.

To further test its developing qualities we made two exposures on two of Cramer's 40 plates (4x5), in the camera on a rainy day with a small stop f-128, one of a second, and another of half a second.

On this the above developer, without alkali, acted quite slow, it being very nearly three minutes before the sky portion began to make its appearance. We accordingly commenced adding, in small quantities, a solution of carbonate of potash, as small as we thought was sufficient to accelerate the developing action, and obtained two negatives of good quality, having ample density in the sky, with an abundance of detail in the darker portions, and shadows of remarkable clearness. It took about ten minutes for each plate. The solution thus compounded for rapid exposures stood when we finished, about as follows :

Warm water,	1 ounce.
Sodium sulphite (cryst.),	48 grains.
Para-amidophenol,	2 grains.
Carbonate of potash,	6 grains.

For extreme short exposures the potash may be increased up to 20 or 24 grains to the ounce.

For developing slow plates for time work Dr. Charles Ehrmann recommends the following :

Distilled hot water, 150° F.,	10 ounces.
Sodium sulphite (cryst.),	1½ ounces.
Para-amidophenol,	48 grains.
Carbonate of potash,	½ ounce.

If kept at 65° F., none of the "para" will crystallize out. It will be noticed that high temperature makes a solution more than twice as powerful in the para salt than the one at which it was 100° F. The developer can be made to produce opaque blacks in the negative and leave the shadows crisp and clear and free from fog of any kind. Ten ounces will develop nearly two dozen 6½x8½ plates; any slowing up of the developer can be compensated for by the addition of the potash solutions. It retains its clearness perfectly even if exposed for some time in an open graduate, and after use in development changes to a light lemon yellow color.

Another merit is that it does not stain the fingers, and is therefore the par excellence of developers for ladies and others. It is a quick acting developer, becomes less easily exhausted than any other, and will not chemically stain the film. It is remarkable even by long development how perfectly clean and white the unexposed portions of the negatives keep. It is advisable to filter in developer occasionally. We commend the developer to all amateurs wishing to obtain, easily, good results, and regard it as an advance in the right direction.

Artistic Photography.

BY CATHERINE WEED BARNES.

[Read before the Yonkers Photographic Club, Oct. 8, 1891.]

THE *pros* and *cons* on this subject have for so long faced each other in what might be called a mental equation, that it would seem by this time as if "x" ought to equal something more than an unknown quantity. What, then, is artistic photography? Must not the question be answered by asking Pilate's question, "What is Truth?" In our day and generation all sorts and conditions of men claim the name of artist, so that it has lost much of its distinction, and yet there must be a general and deep-seated reverence for the beautiful in the human heart when we, instinctively, use the word to express our highest admiration for man's handiwork. Art has been forced to masquerade in many costumes, yet they can only for a time disfigure the form beneath. There are people whose only idea of art is a mode of deception, and their idea of truth a vulgar revelation of what might better be hidden. A small nature can only see the world in a small way, and when its pint pot of comprehension is once full, time is wasted in trying to make it

hold any more. A broadly cultured nature, on the contrary, feels that it best honors art by considering her as one with truth and as being the highest effort possible to the human mind of realizing in visible form its highest ideals.

The old Italian masters of painting were ignorant of some very important details in anatomy, and their saints were often made to assume positions which offend our modern canons of grace and dignity, but the artists revered their work and put a soul in it unknown to many of the more correctly drawn pictures of to-day. Artistic taste is confined to no age, country, or condition of life, and, that this fact is being more generally recognized, is the best possible indication of our mental growth as a nation. It is no act of charity for the followers of painting to admit the followers of Photography to their fellowship. Photography does not need to beg admission to the temple of art or be admitted to it on a painter's ticket. She is entitled to her own doorway, for a photographer is not a painter any more than an organist is a violinist. True lovers of art should meet on an equal footing while poor workers should be relegated to obscurity. There are men and women in all conditions of life who make us think of Mr. Lincoln's story about putting square men into round holes. No matter how carefully you may trim off his corners the man never seems at home in the hole. This is the case with many of the so-called artists in photography who never would be artists in any profession, who would be laughed at if they attempted painting, but who consider themselves justified in taking up the camera as that, they think, is machine work and can be done with little trouble. Verily their work shows they were not mistaken. Photography has had to suffer long enough from such incompetent workers and the public should be taught to forget the idea, learned from them, that there is no really creative work in it.

In photography, as in painting, the first lesson is learning how to see and then how to present what you see to others. "Make up your mind," a painter once told me, "just where you mean your brush to go and then put it right on the spot, not rub all around it." The same rule can easily be applied to photography. Two camerists go together on an outing and while one takes many more pictures than the other, the latter's few prove superior. Why? Is it, as his companion says, "waste time" to carefully study different points of view before making a selection and then just as carefully arranging the focus? Does one lose by waiting until the cloud passes from the sun, or the foliage is quiet, if that will assist in a better result? Or, if a figure seems needed to improve the composition, taking trouble if necessary, to find one? All these things count and no one can expect artistic success who neglects them. Landscapes are easier than figures or interiors, yet the work needs to be as well done as any other, but few camerists realize that the time of day chosen, for instance, can make or mar their pictures and that an hour or two may cause all the difference in the world. Happy accidents

will sometimes occur, but only the careful workers can be reasonably sure beforehand of their negatives being of any value. It requires positive genius to take liberties in any branch of the fine arts, and I do not believe in making a virtue of careless focusing, developing, or printing. Thorough attention to technical details need not militate against a picture showing artistic excellence. It is more likely to bring that excellence into greater prominence. The lens will only take cognizance of what is actually before it. Very true! There are many ways, however, to look at a subject and a slight movement of camera or tripod to one side, forward or backward, may entirely change the character of the picture. I was obliged once, in order to get a certain desired view, to balance myself on a narrow slippery stone in the bed of a stream, fortunately shallow, and standing my tripod in the water. The natural result, wet feet, did not weigh with me in the least, for a good picture was gained.

Here then, are two prime requisites in artistic photography, patience and enthusiasm, but the first has little value by itself. Some animals are quoted as illustrations of patience whose instinct leads them when their work is destroyed to begin again at the same point as if nothing had happened and it was for the first time. There are people who work just that way, but their labor is wasted for they never make discoveries or help any one, not even themselves. It is the brain behind the lens, as behind the brush, which governs the result. You cannot communicate any information to others unless fully possessing it yourself, and even then you cannot put the artistic instinct into a brain, but you can by patience and the breath of your own strong enthusiasm blow to a flame the tiniest spark already there.

It is impossible to conceive even a tithe of what artistic photography is capable without understanding its limits, and it is no disparagement to say a photograph is not a painting, neither is a statue. To say a photograph resembles a painting is understood to be, and is, a great compliment, for it generally means the picture has nothing stilted, obtrusively photographic about it. A painter, as he works, concentrates his vision, or, in other words, focuses on the particular spot where his brush rests and then turns to another, but he does not take in the picture as a whole, only in sections. The lens, at the time of exposure, takes in everything at a glance and thus more truly represents the relation of the different parts, and the art comes in when the camerist snatches the exact time at which those relations are most harmonious. I understand what can be said as to the various shortcomings inherent in the nature of a lens but the greater part of the blame should, most generally, rest on the photographer. Given a fine lens and imperfect results it would seem as if it was a case of a poor workman blaming his tools. We think it all right for a painter to spend years learning how to use a brush and expect any tyro to understand almost at once the wonderful capacity of a good lens. After handling brushes for years, I can speak feelingly on

artistic photography and strive to carry into it the lessons and training of the painting studio. One can thus best realize the technical difficulties the lens must meet and out of them win a kingdom of its own.

As a painter requires different brushes so does a camerist different lenses, for what will take a portrait is generally a failure for outdoor work or interiors and *vice versa*. Here a trained artistic judgment is valuable and should largely influence the selection of a point of view, for what might look beautiful in a painting often makes a poor photograph, as the glamor of color is apt to dazzle and mislead the average eye. Color is the last refuge of many a poor painter who cannot draw correctly to save his life, and it is much the same in photography. If that *ignis fatuus*, color-photography, is ever gained we shall probably be tortured with work which would rank with the modern chromo. The camerist must learn, also, not to take everything in which a casual glance finds beauty, and he has gained a long step forward towards photographic perfection when he learns to decline taking everything he sees. A painter can materially alter a face or figure, leave out or put in what he wishes and his results are called "works of genius," while the camerist who secures moonlight effects by photographing a sunset, intentionally under or over-exposing a plate, printing in clouds, or otherwise securing striking effects, hears his results called "tricks" or "dodges." The painter has one very great advantage, in that from sketch to finished picture he has the various stages of growth visibly before him for correction or alteration, while the photographer must generally decide on changes at a glance, and, to ensure even reasonable artistic success, there should be perfect accord between sitter and photographer. The latter is helpless, no matter how great his taste and skill, if the model is unresponsive or has no histrionic instinct. The variety among sitters is about equal to their number; one can safely calculate on no two being alike, and they must be comfortable, body and mind, to be of any value artistically. Strange to say, too, the same person who would sit for half an hour to a painter without complaint, when he or she goes to a portrait gallery wants what is called the "instantaneous method" used. Artistic photography will never show its full powers until both sitter and operator consider it worth while to take the matter seriously and each do what the Frenchman would call "his possible."

It is hard for even the best known and honored of the portrait workers to shake off the traditions of the ordinary portrait studio, and think out a picture. This was shown at the professional convention at Buffalo, last July. In one of the prize pictures the main figure was taken from life, but the other two were painted on the background. No one seemed to see anything inartistic in such an utterly incongruous mixture, but it seemed to me a startling blending of reality and sham. It is useless to expect to attain artistic excellence by following only one's sweet will, and proper training is

as much needed in a portrait gallery as a painter's studio, while a thorough comprehension of the future opening before the camera implies a liberal education in every sense of the words. The lens is more than a brush, there is more to it than focus, and I always handle one with much the same sensation of awe which always comes over me when managing the stops of a church organ. It may appear strange indeed to many people, that anything approaching inspiration can be thought of in this connection, and for it I feel that the "press the button" idea is largely to blame. "What costs nothing is worth nothing," says a great writer, and especially is this true when we spend not merely money, but actual hard work. I would, for really artistic results, have the cheapest tripod camera with which I can focus properly, than the finest hand one ever made. One which I have cost me about thirteen dollars, and it is infinitely preferable to any hand camera a dozen times its cost.

There is less opportunity for exercising the imagination with interiors than with figures and landscapes, but there is great scope for artistic taste and, indeed, I do not know where it is more needed. The work has special difficulties, but care, patience, a determination not to be easily discouraged and not to repeat mistakes will bring success. But, as in all camera work, the amateur should learn to look at his results from the outside, gladly welcome criticism, but weigh carefully all praise and not allow it to cloud his eyesight so that he loses the power to judge his own work justly. The softest and best lighted interior effects are only gained by daylight, no illuminating power having yet been invented which can improve on the light of the sun. Interiors require perfectly sharp definition, and softness is best gained, not by careless focusing, but by diluting the normal developer with half water until the details are well out before building up the density. You cannot expect to gain clear brilliant negatives by using any but fresh developer, any more than win a race with a worn-out horse. Development is a far more essential factor in securing an artistic picture than is generally supposed, and I firmly believe in using slow plates and long exposures except in very unusual cases. Orthochromatic plates are promising to be extremely useful in art photography, but as yet, they require careful management, with or without color screens, and in the developing room. I intend making their use a special study this season in figure work.

This thought of art in photography opens up a wide field for discussion, and I have indicated only a few points that were forced on me in my own experience. Am I raising the ideal too high? To approach it, seek guidance from the great masters of painting and sculpture, not to copy, but to learn from their longer experience, and then study closely and constantly the possibilities and limitations of their younger sister, photography. Infuse into these lessons the results of your daily experience and increasing powers of observation and then, forget them, or in other words, make them so much

a part of you that they do not hamper but guide you as the unseen rudder guides the ship. Every failure, and they often come, should be an object-lesson, teaching what to avoid, and every success strengthens one's determination to do good work. Artistic photography is no dream. It can be made a visible reality, and every effort we make in its service benefits others as well as ourselves. Its rewards will not come unsought, and here, as in all other lines of human effort, we must, first, last, and all the time, make up our minds to be thoroughly in earnest.

Eikonogen and Oxygen.

BY JULIUS WILCOX.

FORMERLY, when we had eiko in the crystal form, dissolving it was so much trouble that I mixed up considerable quantities; now, the powdered form (although I fancy it is neither so vigorous nor so lasting as the crystal) is so handy for working that I have gotten into the habit of mixing only a small quantity for each lot of plates. For slides, I use a one-solution developer made up of four grains each of eiko and hydro, one scruple sulphite and a half-scruple carbonate of soda, with one and one-half ounces of water. I use granular sulphite, in the form of fine powder, and a refined carbonate; of the ordinary crystal sulphite and the ordinary commercial sal soda double these quantities would be required. The small quantity stated above is my modicum for up to ten slides, although, as I mat out the unused portion of my negatives, the developer has less work to do, and therefore goes farther; anybody can easily multiply the proportions to any quantity.

The other day this mixture, instead of having the normal golden color on adding the water, came out a vivid green, which the old eiko crystals assumed on adding the sulphite; those crystals, alone, were a beautiful amber. It happened that I had put a little soda carbonate, for convenience in using, into an eiko box that once contained eiko crystals, which had discolored as those were apt to do; the soda had taken a slightly dingy shade from the atoms of darkened eiko which clung to the box. It seemed impossible that this absurdly small touch of browned eiko could give the mixture the old eiko color, and yet I cannot think of any other conjecture. Another day I dropped the four chemicals as above, dry, into the phial, and left them an hour or two; taking it up then, to add the water, I found a part of the contents had turned brown, and the resulting mixture was of the tint of sherry. The other mixture I threw away; this one I used, and found no difference except possibly a slight loss of energy. A few drops of water were remaining in the phial, and my conjecture is that the eiko, becoming wetted, quickly absorbed oxygen from the air in the phial.

I also tried spreading on a glass plate a small quantity of the eiko salt and wetting it with water, but no change in its appearance occurred, showing that under similar conditions a slight touch with an alkali only is what changes its color.

The sole moral is that this substance must have a remarkable greed for oxygen, to take it in this way. I suppose, indeed, that it does its intended work mainly by absorbing oxygen, and that its darkened color, signifying exhaustion, comes from its having gotten oxygen in one or another way. If it unites with the oxygen in the water, it does not do so with any observable deterioration, for it is air, not water, which we seem to need to preserve it from; when dry, it keeps indefinitely, but as soon as wetted it begins to be devoured by that greedy agent.

Snap-Shots Going Westward.

BY M. Y. BRACH.

GOYOTES, prairie dogs, dead cattle, volcano cones, cow-boys on bucking bronchos, picturesque Pueblo Indians. These are among the subjects for snap-shots on the trip from New York to Southern California over the Santa Fé route. A few hours' drive from the railway station at Flagstaff, Ariz., are the ancient cliff-dwellers, whose homes are hollowed out of the sides of a picturesque canyon. The famous cave dwellings are in a volcanic mountain a few miles from the canyon. The Grand Canyon of the Colorado is not far from this route to California. The amateur can look over the brink of this canyon and photograph the river right below his feet, a sheer descent of six thousand feet. Then he can descend to the river, and look up and see the stars shining brightly, even though the observation be made at midday, so deep and narrow is this wonderful canyon. A petrified forest, a U. S. military post, a curious Indian city three acres in area, built on an isolated rock in the valley of a deep canyon; the longest cantilever bridge of its class in the world, with one span of 990 feet, and Zuni Indians complete a short list of the photographic novelties procurable in this trip over the continent. Of course, at nearly every eating station on the road, you will meet an "Uncle Dick," or an "Uncle Billy," who came West forty years ago, and can tell you thrilling stories of his experiences in hanging "hoss" thieves, finding coal and gold mines, with now and then an Indian fight. A man with such an experience ought to have his picture taken. So you take him and he is much pleased.

The old Californian in your car begins to expatiate on the clearness of California air. You pick up your photographic ears at this and listen attentively, forgetting that the old gentleman had a big snifter of whiskey at the last stopping place. The pioneer asks your estimate of the distance to

"yonder mountain," pointing to a peak several miles off. You modestly say that it may be five or six miles from the car. "Five or six miles!" he exclaims in disgust. "Why, stranger that there peak is eighty miles away if it's a rod. Guess you don't know how clear our air is out here." I guessed I didn't, too, and retired seemingly disgraced. It revived me a little, however, when I measured the distance on the map, and found the mountain was only three miles distant. Photographers generally credit California air with all the clearness that is due it, and the splendid photographs taken in that state out of doors are unequaled in the matter of clearness by any prints we have seen elsewhere.

In Southern California one comes to orange groves, vineyards, old mission ruins, and Indians with now and then a lot of Mexicans, as subjects for photographs. But more of these another time.

How to Begin.

BY J. C. HEGARTY

I.

IN PREPARING an article for beginners, the writer, who has had a few years' experience in photography, and who has tasted the joys and sorrows and the successes and failures of an amateur's life, feels that he has entered into a subject which has been written of over and over again, and is consequently old to many, but new, nevertheless, to some who are just entering the ranks of amateur photographers. To the beginner, who has an instructor to guide him aright in his first efforts, this article will have but little value; it is written for those who enter photography with but little or no knowledge of the process, and whose only means of attaining to photographic knowledge is that of experiment or by studying instruction books. For such it is hoped this article may have some value.

There are many who begin photography under the impression that it requires but little effort to produce good results. They belong to a numerous class who are beguiled into photography by the advertisements which are scattered abroad in almost every paper, and which tell in rosy language how easy it is to take photographs.

Very likely the beginner's first effort is a picture of some member of his family or a friend willing to suffer, and after the exposure is made, and it is usually an over-exposure, he proceeds to his extemporized dark-room and floods his plate with the one solution developer supplied with the outfit, and behold the image flashes up and disappears into a smoky fog as quickly as it appeared, and his efforts have resulted in a failure. He then tries groups, snap-shots, interiors, and flash-lights in turn with the same results. These discouraging failures are due not to the poor quality of the plates used, but simply because the would-be-amateur has begun wrong, instead of his first

efforts being landscape views he attempts the more difficult branches of the art and very often uses plates of the very highest sensitometer number. One of the most frequent causes of failure is an unbalanced developing solution or lack of knowledge in using the solution ; for this the directions sent out by the plate makers are responsible.

The formulas given in these directions are usually for a perfectly correct or normal exposure, which is rarely made in landscape work, and in others the solution is given as strong as the plates will bear with a short exposure. There are a few rules and suggestions which, if carefully followed, should give satisfactory results to the beginner.

All will agree that the first efforts should be on inanimate subjects with a comparatively slow plate, and the beginner should make himself master of landscape photography before attempting the more difficult branches.

Expose the plate on an open landscape brilliantly lighted or an architectural subject, develop slowly and carefully with any good developer, and a fairly good negative should be the result. The note-book of exposures should be carefully kept, in it should be recorded the subject, condition of light, stop used, length of exposure, hour of day, and any remarks concerning the scene or exposure which might be of assistance in developing. A larger note-book should be provided in which to keep a record of the treatment of successful negatives, discoveries during practice, and all items of interest to the amateur.

The beginner will first turn his attention to the selection of an outfit. He should choose a camera made by some reliable maker, it need not be an expensive one, but should be light and strongly made, and perfectly light-tight when the plate holder is in position and the lens capped. The camera should be provided with a swing-back and a sliding front, and should be fitted with a good single view lens, which, for general landscape work, will give as good results as many of the more expensive rectilinear series. The size of the instrument will of course be in accordance with the desire of the beginner. Some will prefer an instrument of one of the smaller sizes while others will not be satisfied with less than a $6\frac{1}{2} \times 8\frac{1}{2}$ size. The latter makes a picture of good proportions, and by using a kit in the holder, plates of the 5×7 size can be used for subjects which compose best on a small plate. It is well to include one or two extra plate holders with the camera to be used when on extended trips. The beginner should select some plate of medium rapidity and use it until he can produce good negatives, and use it under the various conditions of light.

The Forbes Landscape Plate will be found a most excellent plate, being of medium rapidity and of great latitude of exposure, a point of considerable importance to the beginner. It is easily developed and yields clear, crisp negatives of fine printing quality. The studio brand is excellent for instantaneous and other work requiring quick exposures. The writer has

used many different brands of plates and has found none better than the Forbes, which he can recommend to the beginner as an excellent plate.

When ordering the outfit it is well to include a few dozen plates of the size the camera is intended for, and also a few dozen of a size smaller. The latter are for practicing on, not being as expensive to use for the first efforts as the larger size, and capable of yielding as fine results.

Buy the necessary chemicals from a stock dealer, and always insist on getting the best. Do not buy the ready mixed developers, but prepare your own developing solutions. If possible do all the work from the focusing to the mounting of the print, then you can exhibit your views as specimens of your own work. Those who simply make the exposure and have their plates developed and printed by a professional, and who belong to the press-the-button-cannot-do-the-rest class of photographers are not worthy to be named among amateur photographers.

The first efforts at developing may be done in the kitchen or other room at night, but if earnest, careful work is to be done the beginner should provide himself with a regular developing room. It need not be an elaborate one but should be made as complete and convenient as possible. A closet will do, but it is better to have a room of convenient size for working in. It should be at least 8x10 feet and must be absolutely light tight when the door is closed. A sink, or table, water supply, and several shelves will form the interior fittings; if a water supply cannot be had a large bucket fitted with a faucet should be suspended at a proper height above the sink, and the sink fitted with a pipe to carry off the refuse water. The room should be abundantly lighted, but the light must be of a safe quality. An opening should be cut in the wall and fitted with a frame containing two sheets of plain glass, between which is placed three or more thicknesses of yellow tissue paper. The source of light should be placed outside by this window. Thick card-board covers for the trays should be used, and the trays covered during the development of the plate, the covers to be removed at brief intervals to see how the plate is progressing. By this means the danger of fogging is avoided. Two things are absolutely necessary in the developing room, perfect order and absolute cleanliness. Have a convenient place for everything, and everything in its place. Have your trays and bottles plainly labeled, and never use them for any other purpose.

It is presumed that the earnest beginner will become familiar with his instrument before attempting any exposures. He should learn how to focus properly, and also the functions and use of the swing-back and sliding-front.

Then the novice will fill his plate-holders, which the writer prefers to do in total darkness, using care to place the film side out. This side can be distinguished from the plain glass side by the sense of touch, having the thumb slightly moistened.

Having your plate-holders filled you are now ready to start out to make

an exposure. Select some simple landscape view and notice that the shadows cast by the sun fall to your right or left-hand when you stand looking direct at the view. This will give a harmony of light and shade. Never expose on a scene when the sun is directly behind the camera, as the result would be a flat picture, devoid of contrast. Focus carefully on some object, about sixty feet from the camera, and which will be located about midway between the center and upper corner of the ground glass. This should give a good general focus. Use a large stop in the lens for the first focusing, then stop down and use the largest stop, which will give clear-cut detail to the edge of the glass. Now insert your plate-holder, cap the lens, and carefully draw the slide from the holder.

The next question of importance is the length of exposure. There is no rule by which the time of exposure can be given. It is something that can only be learned by practice and close observation. I endeavor to make the exposure according to the brightness of the image on the ground glass, taking into consideration the rapidity of the plate. The beginner should make notes of the condition of the light, stop used, and exposure, and pay close attention in developing, when he can readily tell if a plate has been correctly exposed. As a suggestion, the exposure for an open landscape view in bright sunlight, using a small stop and a medium plate, should be from two to six seconds, but much depends on the nature of the scene.

The time of exposure having been determined, the lens is carefully uncapped so as not to jar the camera, and at the expiration of the time the lens is again capped and the slide inserted in the holder. Now make the notes in the note-book. Having found another view which promises well we will expose in a similar manner, and after having exposed several plates on different scenes, we will return to the dark-room to develop the plates, and learn the results of our work.

(To be continued.)

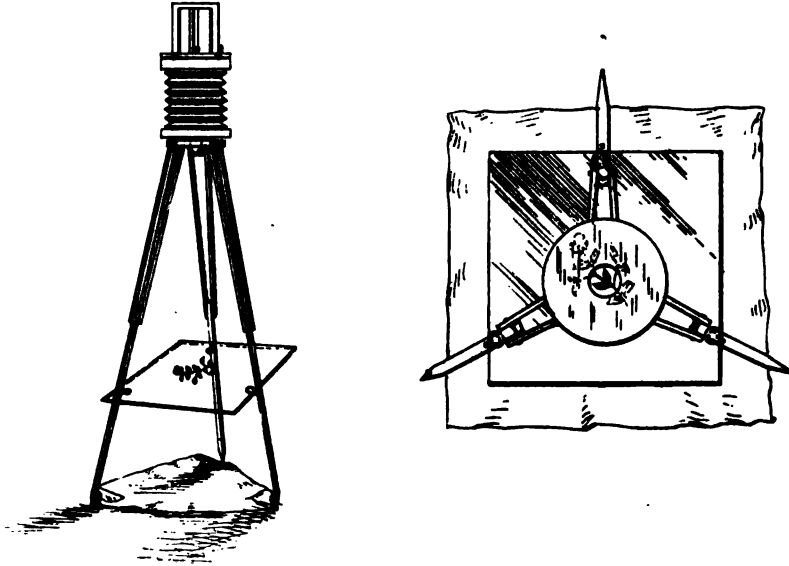
Photographing Flowers.

THE *Photographic News* suggests an easy way to photograph flowers without casting shadows. We have drawn sketches to illustrate the method. The upright figure shows a tripod, holding a sheet of glass midway between the camera and floor, while on the floor is a background of cloth.

The square figure is a plan view, showing the round hole in the top of the tripod through which the lens of the camera projects, the sheet of glass supported on screw eyes put into the legs of the tripod, and the cloth below on the floor.

Says the *News*: "Some time ago we devised a plan of arranging flowers for photography by which excellent results may be achieved, but it involves

some little trouble in the arrangement of the apparatus. It permits of the most delicate forms being supported without casting any shadows whatever, and the effects produced are extremely graceful and fairy-like. The necessary stand for the camera can be knocked together by any one who can handle a hammer, and the expense is trifling.



"The stand referred to was made of an old camera tripod, with the head removed, and a triangular piece of pine with a two-inch hole bored in its center, substituted for it. Upon this board, the camera is placed face downwards, with its lens projecting through the hole. The legs of the tripod are conveniently shortened, so that the image of the flowers can be focused without using a pair of steps. Midway between the floor and the camera, a sheet of window glass is supported by means of cords stretching from leg to leg, or the glass may be made to rest upon screws temporarily placed upon the legs. Upon this sheet of glass the flowers are arranged in whatever manner the taste of the operator may suggest. A plain background of any description may be placed a couple of feet below, simply resting on the floor. Its condition and general appearance is not a matter of much moment, for it will be out of focus. The lens which we used in the experiment was a portable symmetrical—stopped down—and, with the help of a yellow screen, and a very long exposure, we were able to get some very fine results.

"It may be mentioned that this method of supporting objects during exposure is most useful for other objects besides flowers. When a number of small articles—such as coins, geological specimens, or shell—have to be photographed it is most convenient. They have simply to be laid in position,

and there they remain, without any aid from cement, pins, or any of the supports which have to be called into requisition when such objects are photographed against a vertical background. We trust that those of our readers who will care to construct the very simple appliance here described will derive as much benefit from it as we have. As far as we know, the idea is original with us; but, in these days of universal photography, it is quite possible that we may have been forestalled."

The Exhibit of Photographs at the American Institute Fair.

BY F. C. BEACH.

USUALLY the exhibition of photographs at the annual American Institute exhibitions is confined to a few leading portrait photographers, but this year a special inducement was offered by those in authority to bring out an exhibit of amateur work as well. The large upper front hall had the walls covered with maroon cloth, and special gas and electric lights arranged for illuminating the pictures in the evening.

The amateur exhibits were sent by members of the Society of Amateur Photographers of New York, and were hung and arranged by a special committee of the society having Mr. T. J. Burton, the Secretary, as its chairman. A catalogue was sold at the moderate price of five cents, in which is a printed ballot which the buyer is supposed to cast by dropping into a large box, for the exhibitor, or special picture or frame that is thought to be best entitled to receive the Hetherington Magazine Camera, which is presented as a prize. On the title-page of the catalogue is the following: "First Annual Exhibition by the members of the Society of Amateur Photographers of New York, at the American Institute Exhibition commencing Wednesday, September 30, ending Saturday, November 28, 1891. The prize to be awarded by vote is a Hetherington Camera." Medals are to be awarded at the close of the exhibition by special judges selected by the representatives of the society. A first (superiority), second (excellence), and third (merit) medal is reserved for each of the five classes, viz.: Landscapes, Instantaneous, Portraits, Marines, Enlargements.

After ascending the stairs we found specimen exhibits by Ranger & Cornell, of Rochester, N. Y., Roesch, of St. Louis, Mo., and McMicheal, of Buffalo, attached to cloth screens, presumably portions of exhibits that were shown at Buffalo, arranged along the sides of the hall leading to the exhibition room. They were poorly lighted, but we noticed admirable work by Mr. McMicheal, classic studies, and a very good tea-party picture, by Roesch, while Ranger & Cornell had a life-sized head of an old man that

was particularly clear and interesting. On the opposite side of the hallway was a frame of pastel paintings, by Wm. Shettle, of a fair order of merit.

Entering the exhibition room we noticed the exhibits had been nicely hung for easy examination, but there appeared to be a lack of system so far as they corresponded with the numbers in the catalogue. Where there seemed to be an excess of wall space we should have supposed it would have been easy to arrange them consecutively. The catalogue appears to be gotten up alphabetically, regardless of the position of the frames. However, it is the quality and character of the pictures that we will examine. Turning to the right we observed Miss Barnes's "Elaine" photographs (11x14) as exhibited at Buffalo. While they were technically fine, and all that could be desired in that way, some of the figures were lacking a certain quality of ease and naturalness that one would like to see. Probably the poetry designed to be illustrated was clearly portrayed. We believe they were the largest direct photographs in the room. Few amateurs attempt the larger sizes. Next in point of interest was the fine exhibit, by Mr. Alfred Stieglitz, of all of his platinotype work that was shown at the spring exhibition, and many other new frames. A few of his Swiss landscapes, showing distant clouds and mountains, were beautifully clear and crisp. His work certainly is worthy of being medaled.

Another interesting exhibit was Mr. Grisdale's views, in platinotype and albumen, of Bronx Park and Dingman's Ferry. Mr. R. L. Bracklow had a number of new pictures of excellent quality.

Prof. George R. Cromwell had two frames of photo-doubles, and views about Denver, Colorado, that were novel. The large collection of portraits and figure studies, and studies in posing, by Mr. Charles H. Davis was particularly noticeable, and exhibited a variety and attractive quality that was very pleasing. The frame was rather too conspicuous for the pictures. Most of his work was similar to that shown at the spring exhibition.

The variety in style of printing, displayed in Mr. Edward Leaming's exhibit, is one of the features of the exhibition. He had thirteen frames containing prints on different kinds of paper, like Japanese parchment, tissue, etc., and another frame of views on Whateman's drawing paper. They were done in different colors, red, brown, black, sepia, etc. We liked his street scene in Edinburgh, and his "Mary Stuart" picture. The latter was gracefully posed and softly lighted. There are also a number of views of old historical New York houses by him. In fact, most of his exhibit occupied nearly the entire west wall.

Mr. Hugo S. Mack, a new exhibitor, displayed some very creditable work in seventeen frames, his latest pictures being the best. We were particularly pleased with two or three platinotype prints of views on the Walkill River and Glen. They were full of fine detail, nicely lighted, and artistically located. The negatives only were made by him, but the prints

revealed their good character. We are surprised that he should have put in his exhibit such a fogged picture as No. 156 was. His other views were mostly of foreign scenery, but not especially attractive.

The peculiar picture, or enlargement, by Mr. John N. Riker, of a headless man standing erect, holding in each of his outstretched hands his own head, was one of the photograph freaks we hear of. It was very cleverly done.

Mr. C. C. Roumage had a frame of eighteen snap-shots, taken with his hand camera, that displayed careful work.

The work of Ferdinand Ruppert was very fine, technically, and covered views in Germany, on the coast of Massachusetts, and composition group-pictures, among the latter of which was "All the Comforts of Home," a very amusing picture.

Mr. A. P. Shoen had several attractive views along the Walkill River, printed on aristotype paper.

The series of views, sent by Mr. C. Van Brunt, of the Catskill mountain region contained some very nicely arranged roadside scenes, while in others the distant mountain peaks and clouds were clearly brought out on the orthochromatic plates, in connection with which the color screen had been used.

Mr. J. W. Wickersham displayed views of Texas scenery, and of peculiar Florida owls, that were carefully done.

The small $3\frac{1}{4} \times 4\frac{1}{4}$ views, made with the hand camera by Mr. G. W. Wundram, of Brooklyn, were extremely good. We liked best his view "On Board the U. S. Steamer Pensacola" and "Country Boys on the Fence."

The four or five frames by Mr. D. K. Young contained a variety of landscapes, those in 274 of New York City, and Southern scenery appeared too black and white, also a few of Niagara Falls and the rapids. An instantaneous picture of a negro group, and a view of the ocean at Bayhead, N. J., were among his best.

Mr. John Zollinger had several well taken hand camera snap-shots.

Mr. E. C. Bennett had the same frame of the interior of artist's studios, as was shown at the spring exhibition, and Mr. Edwin H. Lincoln's medaled flower and fruit photograph was also exhibited.

Dr. L. H. Laudy sent a number of enlarged photo-micrographs of insects and natural objects, excellent and sharp, which were specially interesting as examples of scientific photography.

Perhaps, the largest exhibitor was Charles Wager Hull, the superintendent of the American Institute, who had a number of landscapes, several around Larchmont Manor, and many marine views of racing sail-boats, yachts, etc. A few cloud photographs were especially good, and an effective picture was of "St. Mary's School Ship." The prints, professionally made from his own negatives, were very crisp and uniform, and are creditable to such a veteran amateur. Located near his exhibit, on the same wall, was the extensive exhibit of Mr. A. L. Simpson, comprising a number of marine

views of several racing yachts, that were soft, full of detail, and nicely located on the plate. His other pictures were of marching policemen, city architecture, and animal studies, one of a group of hunting hounds being especially good. No. 210, a bromide enlargement of sheep in Central Park, appeared to us to be the most artistic. He has done some careful instantaneous work.

Dr. John T. Nagle repeated his several frames of Texas views, shown in the spring, and they were typical specimens in showing up Texas life.

Near the rear end of the hall on the north wall were four frames of careful work, shown by Miss Emilie V. Clarkson, mostly of figure compositions, and all were nicely done. We were well pleased with the Gamesters, their posing and light was quite effective, but we thought the background might be improved.

Mr. T. J. Burton had his "Hard a Port" enlargement and several other views of Broadway, and portraits that were fair examples of rapid work.

Of exhibitors not members of the society, we noticed, down stairs in various alcoves in the northwest corner of the building, excellent photogravure specimens by the New York Photogravure Co. One 11x14, called "Autumn," showing a girl walking along a river bank, was of a beautiful tint, full of detail, and well arranged. We suspect it was from a negative by Dr. J. L. Williams.

Mr. G. Rockwood's exhibit was made up mostly of bromide enlargements, from several negatives by Mr. A. L. Simpson, were excellently done, and illustrated the progress that is being made in this branch of photography.

Other exhibitors were Robinson of Third Avenue, mostly portraits, the best being of a "Girl in Dancing Costume"; De Young, showing fairly good colored and crayon enlargements; Tanguerey, small portraits, technically good; Fredericks, miscellaneous portraits, up to his usual excellence; Cramer, who had the most varied and interesting exhibit of all, comprising fine landscape work, made by Jackson, beautifully soft portraits and large heads, and architectural views. A very striking picture was a nearly life-sized portrait of a pretty looking mulatto girl, having a tasteful turban on her head. The softness of the shadows and the clearness in the light portions, combined with the beautiful detail throughout, all made up a remarkably effective study. Wilhelm had an exhibit of small cards. Dana made quite a show of 8x10 ivorytype portrait studies. He had also a number of actress photographs, made with his usual skill in lighting and posing.

Mr. G. Frank Pearsall, of Brooklyn, displayed the greatest originality in fixing up cabinet photographs to look odd. He employs rough paper mounts on which the albumen print is mounted, the latter having its edges sizzled, or roughened by some special instrument, then at one upper corner is a sealing-wax stamp. He styles it the "Knarfograph," quite a descriptive title. His portrait work was very good, and all was tastefully arranged. He had quite a good group of amateur theatrical performers.

In apparatus, we noticed, first the display of the Scovill & Adams's at the right of the center aisle, as we entered the hall. Mostly types of hand cameras of their make were on exhibition, the latest being the "Henry Clay," which was explained by an attendant in charge. The camera invented by Mr. Price, a practical photographer, appears to possess many excellent points, is light, adapted for short or long focus, rising front, swing-back devices, and can be used with or without a roll-holder, and is fitted with the latest shutter mechanisms. Further down the aisle was a smaller display by Anthony & Co. of the Blair "Kameret," "Hawkeye," and other hand cameras, accompanied by specimen photographs. Tripod's and tripod cameras were also shown. The "Kameret" has been improved considerably, and is said to give good satisfaction. It can be used for either plates or films.

In an alcove, on the north side of the building, we found what is called "The Student" camera, sold for two dollars, said by the makers to be a first-class article, no chance to fail, and claimed to do good work. It has a small single lens, of the spectacle order, inserted in one end of the box, while at the other is put the plate, something on the order of the 25-cent pinhole camera. One plate is exposed at a time, at a fixed focus, and removed to a dark-room for development. It may do well enough as a toy, but would be money wasted to those wishing to learn photography in its true sense.

In another alcove, adjoining Cramer's exhibit, was a "Fischer Automatic Nickel-in-the-slot Photographic Machine." We are surprised that it was not put in company with the other curious slot-machines, but it is evidently not automatic unless attended to by some one having brains. We noticed a young lady attendant at work, adjusting the inner mechanism through the back-door, and very few applications for sittings were made. It evidently operates on the wet-plate process plan, as the artificial light is obtained by the burning of a strip of magnesium ribbon, fed out through a nickel-plated depressed slot in the front. It is, probably, based on the plan of the machine exhibited in Paris at the Exposition.

The photograph exhibit is worth seeing, and the Institute is to be congratulated on doing so much this year to encourage amateur photography.

In the Amateur Society's Room was hung a newly painted portrait, said to be a good likeness of Charles Wager Hull, by Mr. Charles Chamberlain.



"*Index Rerum Photographicæ*," by Dr. John H. Janeway. U. S. A., continued from page 406.

and simple is composed of the reducing agent, the alkali, sometimes called accelerator, sulphite of soda, a preservative and water. It will be impossible to give here all the various formulas proposed for the development of the plate, but instead will give a few of the several kinds that are used and recommended by experienced, careful and successful operators:

OXALATE OF IRON DEVELOPERS.

Trutat's Formula.

- a.* Neutral oxalate of potash 30 parts
Water 100 parts
- b.* Sulphate of iron..... 30 parts
Tartaric acid..... $\frac{1}{2}$ part
Water..... 100 parts

Solution *b* will keep indefinitely if placed in a strong light when not in use.

- c.* Bromide of potassium..... 5 parts
Water..... 100 parts

This is a restrainer, and is to be used only in cases of over-exposure. To make the developer add 1 part of *c* to 3 or 4 parts of *a*. If the plate has been over-exposed, add 10 drops of *c* to each ounce of the developer. Develop until the image is visible at the back of the plate. The above proportions are the strongest possible form of this developer.

Eder's Concentrated Developer.

- Neutral oxalate of potash..... 2 ounces
Water..... 6 drachms
Sulphate of iron..... $3\frac{1}{2}$ ounces

Dissolve the oxalate in boiling water; when dissolved add the iron and keep at 200° until dissolved. Set aside for 24 hours, then decant the clear liquid for use. This is a very powerful developer for instantaneous views, but should be diluted somewhat with water.

Eder's Oxalate Developer.

1. Oxalate of potash (neutral)..... 100 parts
Distilled water..... 400 parts
Acidulate with oxalic acid.
2. Sulphate of iron..... 50 parts
Distilled water..... 150 parts
Sulphuric acid..... 3 drops
3. Bromide of potassium..... 5 parts
Distilled water..... 50 parts
4. Hyposulphite of soda..... 1 part
Water..... 100 parts

For the developer take of 1 three parts, of 2, one part. Restrain with a few drops of 3. For over-exposures take less of 3, adding more if required. To give density use 3. For soft, harmonious negatives, full of detail, take of

- | | |
|--------|-----------|
| 1..... | 2½ ounces |
| 2..... | ½ ounce |
| 3..... | 4 drops |
| 4..... | 6 drops |

Ferrous oxalate developer with citric acid for intense (black and white) negatives:

- | | |
|------------------------------------|-----------|
| 1. Water | 500 parts |
| Sulphate of iron..... | 150 parts |
| Citric acid | 2 parts |
| 2. Water..... | 500 parts |
| Neutral oxalate of potassium | 200 parts |

Solution 2 is boiled, and when cold filtered from the green crystals which may have separated out. One part of 1 is mixed with four parts 2 to form the developer.

Alkaline Development—All alkaline developers contain: 1st, pyrogalllic acid or its equivalent reducer; 2d, an alkali; 3d, sometimes bromide of soda, potassium or ammonium, with the addition of sulphite of soda as a preservative, or, as very lately proposed, an acid sulphite.

PYROGALLIC ACID DEVELOPERS.

Cooper's Formula.

- | | |
|------------------------|----------|
| 1. Sulphite of soda... | 6 ounces |
| Water..... | 1 quart |

When dissolved add

- | | |
|---------------------------|----------|
| Pyrogalllic acid..... | 1 ounce |
| 2. Carbonate of soda..... | 4 ounces |
| Water..... | 1 quart |

Developer (1) one oz., (2) one oz., water 1 oz. Restrain with bromide of potash.

Beach's Formula.

A. Pyro Solution.

- | | |
|---------------------------|----------|
| Warm distilled water..... | 2 ounces |
| Sulphite of soda..... | 2 ounces |

When dissolved and cool add

- | | |
|---------------------|----------|
| Sulphurous acid.... | 2 ounces |
| Pyrogallol..... | ½ ounce |

B. Potash Solution.

1. Water..... 4 ounces
Carbonate of potash, c. p..... 3 ounces
2. Water... .. 3 ounces
Sulphite of soda..... 2 ounces

Combine 1 and 2 into one solution For shutter exposures take 3 ozs. of water, $\frac{1}{2}$ oz. A and 3 drs. B, increasing the latter to 5 drs. if the image hangs back.

For over-exposures, water 3 ozs., A 3 drs., B 1 dr., adding more if necessary.

Burbank's Formula.

- a. Water..... 10 ounces
Sulphite of soda..... 1 ounce
- Dissolve and add
- Pyrogallic acid..... 1 ounce
 - Sulphuric acid 20 drops
 - b. Water..... 10 ounces
Carbonate of potash..... 1 ounce
 - c. Water..... 10 ounces
Carbonate of soda..... 1 ounce

Normal Developer.

- Water..... 4 ounces
- a..... 3 drachms
- b..... 2 drachms
- c..... 2 drachms

These quantities may be increased, if necessary, and excess of *b* over *c* give soft, harmonious negatives full of detail. When *c* is in excess, more density and less detail is gained.

Carbutt's Formula.

- a. Distilled water.... 10 ounces
Sulphite of soda..... 4 ounces
- Dissolve and add slowly
- Sulphuric acid..... 1 drachm
 - Pyrogallic acid..... 1 ounce
- And water to make 16 fluid ozs.
- b. Granulated carb. of potash..... 2 ounces
Granulated carb. of soda..... 2 ounces
Water 10 ounces
- Dissolve and add water to make 16 fluid ozs.

Normal Developer.

Water.....	4 ounces
Solution A.....	3 drachms
Solution B.	2 drachms

E. Von Sothen's Hydroquinone Developer.

a. Carbonate of soda.....	60 grains
Water.....	1 ounce
b. Hydroquinone	12 grains
Sulphite of soda.....	60 grains
Water.....	1 ounce

Normal Developer.

Water.....	1 ounce
Solution a.....	1 ounce
Solution b.....	2 ounces

The mixed developer can be used many times.

Prof. H. J. Newton's Formula.

Water.....	1 ounce
Sulphite of soda.....	30 grammes
Caustic soda.....	4 grammes
Bromide of sodium.....	4 grammes
Hydroquinone	3 grammes

For time exposure dilute half with water or old developer.

Prof. H. J. Newton's Formula.

Saturated solution of caustic barium.	1 ounce
Water.....	1 ounce
Sulphite of soda	30 grains
Hydroquinone.....	3 grammes

This is a very rapid developer.

Water.....	34 ounces
Sulphite of soda cryst.....	2 ozs. 3 drms. 17½ grns.
Carbonate of soda cryst..	4 ozs. 6 drms. 35 grns.
Citric acid.....	1 drm. 17½ grns.
Salicylic acid.....	15 grns.
Hydroquinone.....	2 drms. 38½ grns.

I have found this to keep remarkably well and give good results.

EIKONOGEN DEVELOPERS.

Prof. Romyne Hitchcock's Eikonogen Developer.

1. Eikonogen.....	6 grms. = 1 drm. 32½ grns.
Saturated solution sul-	
phite of soda....	50 c. c. = 1 oz. 5 drms. 31 mins.
Water to make.....	300 c. c. = 10 ozs. 1 drm 9 mins.

2. Potass. carb., dry.... 20 grms. = 5 drms. $8\frac{1}{2}$ grs.
 Water to make..... 200 c. c. 6 ozs. 6 drms. 6 mins.

Normal Developer.

Three parts of 1 to one part of 2.

Prof. H. J. Newton.

Salurated solution caustic barium.....	1 ounce
Water.....	1 ounce
Sulphite of soda.....	30 grains
Eikonogen.....	3 grains

Andersen's Revised Formula.

a. Sulphite of soda.....	8 ounces
Distilled water.....	80 ounces
Dissolve and add	
Eikonogen.....	1 ounce
b. Carbonate of soda.....	3 ounces
Distilled water.....	20 ounces

Mix three parts of a with one part of b.

Ready Prepared Solution.

Sulphite of soda	8 ounces
Carbonate of soda.....	3 ounces
Distilled water.....	80 ounces
Dissolve cold and add	
Eikonogen.....	1 ounce

Cramer's Formula.

1. Distilled water.....	40 ounces
Sulphite of soda.....	2 ounces
Eikonogen finely powdered.....	1 ounce
Keep in a well stoppered bottle.	

2. Water.....	1 ounce
Carbonate of potash.....	1 ounce
3. Water.....	10 ounces
Bromide of potash.....	1 ounce

For use mix

1.....	3 ounces
2.....	1 ounce
3	6 to 12 drops if necessary

PARA-AMIDOPHENOL DEVELOPER.

A later developer analogous to eikonogen, but is said to be five times more powerful. The solution is made as follows:

Hot water.....	1 ounce
Sulphite of soda.....	48 grains
Para-amidophenol	2 grains
Carbonate of potash.....	6 grains

If the plate is over-exposed, the potash may be omitted ; if under-exposed, the potash may be added up to the extent of 25 grains. Boiling water will take up double the amount of the para-amidophenol, and if the latter is used soon after cooling, very intense negatives with clear shadows may be obtained. The developer has the property of resisting oxidation by air, and may be used repeatedly until exhausted. It is adapted for bromide paper and lantern slides.

DEVELOPMENT—When the sensitive plate is exposed to the action of light and taken to the dark room and examined, no change can be detected by the human eye, even if aided by a microscope. To all intents and purposes it appears as it was previous to its exposure in the camera. But apply the developer, and what a wonderful change takes place! An image, latent, heretofore unseen, makes itself seen, first dimly and detached, but gradually growing up into a harmonious whole until the picture with all its detail, contrasts and gradations lies before the operator, a reward for his skill and patient manipulations. But how has this change been effected? Notwithstanding the much patient and scientific investigation on this subject, the question of the nature of the latent image is still an unsettled one. (See Latent Image.) As all makes of plates vary more or less as to the proportion required of the various ingredients used in development, and, in fact, with the same make of plate under various conditions of light, lighting and temperature, different modifications may be required, it is necessary to understand thoroughly the functions of each ingredient before attempting the proper development of a negative, which is of itself an art acquired only after long experience and many failures. With the alkaline development, pyro, hydroquinone, eikonogen, etc., are the reducers, *i. e.*, developers. Pyrogalllic acid is a powerful absorbent of oxygen, and reduces the soluble salts of silver to the metallic state. Its place may be supplied by other oxygen absorbers, as hydroquinone, etc. Owing to its reducing power, due to its affinity for oxygen, it gives density to the image. If the amount of alkali used remains constant, the density will be proportioned to the amount of the acid used. The alkali, carbonate of soda, potash or ammonia, termed accelerators, combine with the bromide, which is set free from the silver by the reducing power of the

(To be continued.)

Photographic Albums.

To the Editors of the American Amateur Photographer:

The writer does not mean to be intrusive, nor does he intend to be prolix, in the treatment of this stale subject. While disclaiming the idea of originality in connection therewith I will say that I have found no mention of the following method in the multifarious photographic records:

The album is made by simply binding unmounted photographs as pamphlets are bound, by the use of cord or wire staples. Fancy may dictate as to the suitable covers, and ingenuity will come to her aid, of course, with the requisite skill to complete a tasty job. The use of unmounted photographs presupposes the absence of the "burnish"; but, while I have not experimented with "glaced" prints as to whether they will remain sufficiently flat to be in a manageable condition, I can say that I have no desire so to do. If properly prepared there will be no necessity for the burnish. Persons, who are skeptical, can send thirty cents to the Soule Photograph Co., of Boston (338 Washington Street), for an unmounted 6x8 print, or fifteen cents for one 4x6 in size. Murrillo's "Immaculate Conception," No. 7851, is an excellent subject for selection. After doing this and inspecting the exquisitely beautiful satin-like finish of the specimen, they still yearn for the burnisher, and its accompanying mountainous bulks of mounted photographs. They may be given up as hopeless devotees of meritorious "shine."

I do not know the exact formula which the above mentioned company use, but presume it is similar to this one, viz.: Equal parts of alcohol, glycerine, and water, in which the prints are thoroughly soaked, and then dried between blotters, under pressure. Possibly the editor can supplement the foregoing formula, or else give one which is an improvement. If he could induce the Soule Company to explain their method of preparing the prints, it would, doubtless, receive the approbation of the readers of the magazine.

If the negatives are 5x7, or 5x8, the silver paper should be 8x10 in size. A mask is made with a central opening, to suit the taste of the purchaser, and laid on an 8x10 pane of glass and placed in the frame. The negative is adjusted under the mask, and it is ready for printing by putting in the 8x10 print. When the picture is printed, the margin can be tinted in the sunlight to any depth, by hiding the picture with a mask. If desired the immediate margin of the picture can be printed black, with narrow or wide lines, as the taste may dictate by using the necessary masks. It is a good plan to have a goodly number of masks, with various openings, for determining the portion of negative to be printed from. Four pieces of card-board will answer as well, perhaps, by shifting them over the negative.

The extra cost of this method may deter some from adopting it, but if the amateur makes his own prints the difference does not amount to much. Not only can exquisite effects be obtained, but an enormous number of pictures can be got into a thin volume. Have any of the readers of this article a similar album in use?

G.

CORRESPONDENCE.

PHOTOGRAPHY IN KENTUCKY.

To the Editors of the American Amateur Photographer:

After such a polite request to write something for your magazine, it would seem and be very discourteous not to comply, so I will endeavor to give you a little of my experience in "picture-making," as an amateur. About four or five years ago, in the spring, a number of ladies and gentlemen of our little city organized a camera club. There were about three active members, who did the general utility work, the rest were honorary, contributing funds, etc. The several outings we had were pleasant, indeed, and the good time was general. What with taking long drives, always ready for appetizing luncheons, and in the evenings now and then meet and discuss the relative merits of each picture, each one, I suspect, thinking to himself that his own production was the best, and the various criticisms

passed were laughable. But as time wore on the enthusiasm for photography seemed to be on the wane. The club disbanded, and there was none to tell the tale, photographically speaking, but your humble servant. While laboring under many disadvantages, I still persisted and "went on with the good work," and no matter what the weather was I never grew weary, but still desired to know more. What with asking questions, and reading all articles that I could get pertaining to photography, I feel now that I am gradually climbing.

But not having any other, experience has been my teacher. Here the facilities are not like you have in a large city. No clubs, no lantern-slide entertainments to while away the winter evenings, all of which cultivates the taste and gives one an insight into photography.

I enclose a sample of my work—all my own—which, perhaps, you will appreciate better when I tell you that I always have to improvise a dark-room, and just at the time I need it the family bath-room is generally engaged, then I have to resort to the hydrant to wash my plates an hour or two. I cover the pan, and after many precautionary measures leave it "with fear and trembling," and how relieved I feel when the plates are drying on the rack.

The views I send are in and around this, my home. I also send, as a souvenir of my work, a pretty little poem, entitled "Devil's Hollow," written by my friend, Major Henry I. Stanton, Poet Laureate of Kentucky. The writing is a fac-simile of his own, which makes it more novel and interesting to his numerous friends. The appellation is certainly very inartistic and unlovely, but it is a characteristic suburban drive, leading from our city "thro' the hills and far away." I have made slides from the illustrations, and in my own parlor, with the lantern, thrown them on the screen while the poem is being read. It was an agreeable diversion.

The views were taken with my Hetherington Magazine Camera. I first saw a notice of the camera in your magazine, and it has been mentioned frequently since. To me it has been a "thing of beauty" and will be a "joy forever." It is so simple a child can manipulate it.

In closing, I must tell you your magazine has been invaluable to me. I have studied and learned much from it; my only regret is that it isn't semi-monthly. Wishing it continued success.

I am very sincerely,

ALICE B. ORRISON.

Frankfort, Ky., October, 1891.

[NOTE.—The 6½x8½ views sent were very interesting, especially the general view of Frankfort, showing good distance and clear foreground. Others of river scenery were good, but printed a trifle too light. The prints are on Omega paper. The souvenir was very tastefully gotten up. The 4x5 prints were as a rule clear and crisp, though a few were slightly out of focus. It is a happy idea and worthy of imitation.—Ed.]

19 KILBY STREET, BOSTON, MASS., October 31, 1891.

To the Editors of the *American Amateur Photographer*:

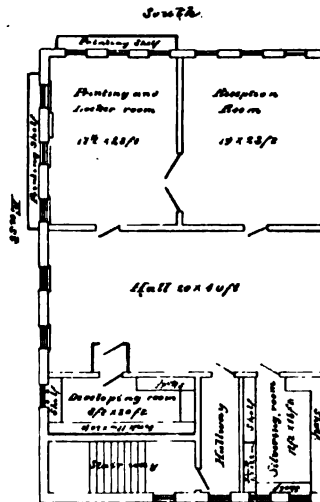
Dear Sir,—An illustrated lecture by the California Camera Club, entitled "The Yosemite Valley," is now on circuit. It will be in the hands of the New York Society of Amateur Photographers in the last half of November; in Columbus, O., first half of December; St. Louis, Mo., last half of December; Louisville, Ky., first half of January; Cincinnati, O., last half of January; Pittsburg, Pa., first half of February; Washington, D. C., last half of February; Newark, N. J., first half of March; Rochester, N. Y., last half of March; Syracuse, N. Y., first half of April; Peekakill, N. Y., last half of April; Hartford, Conn., first half of May; Providence, R. I., last half of May. The sets "White Mountains," "Columbus, O.," and "Boston," can be had on application to me.

Respectfully,

WM. GARRISON REED, *Manager*.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 30th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]



BURLINGTON CAMERA AND SKETCH CLUB.

To the Editors of the American Amateur Photographer:

Dear Sir,—Our Camera Club having recently moved into new quarters, perhaps your readers will be interested in knowing something about us and our new home.

The Burlington Camera and Sketch Club was organized, and articles of incorporation filed, a year ago the coming December. At the time of organization there were fourteen members, and the officers (still in office) were: W. O. Ransom, President; G. H. Washburn, Vice-President; A. Freeman, Secretary-Treasurer; E. L. Parsons, Corresponding Secretary.

The affairs of the club are managed by a Board of Directors, consisting of the officers, and Dr. H. B. Young, W. W. Woollen, and G. H. Kriechbaum. Regular meetings are held on the evening of the first Tuesday of each month. Our present membership is: thirty-four active, two associate, and two honorary members, and new members coming in at nearly every meeting.

Our new quarters consist of the entire third and upper floor of a building, located upon one of the most central and prominent corners in the city, and divided into five rooms.

The frontage is south forty feet and east sixty feet, and on the north is a church-yard, so that we have plenty of light and air. The front rooms are: a reception room, 19 x 23 feet, and a locker and printing room, 17½ x 23 feet, both newly and handsomely papered and painted. The former is also carpeted and furnished, and the latter contains cases of lockers for use of members, and extending out from the window sills, on both south and east sides, are good wide shelves for printing. The two rooms are connected by a large double door.

Next to the rear is a hall, 20 x 38 feet, and to the rear of it are the developing and silvering rooms. The former is 8 x 20 feet, with a double entrance from the hall. A window at the east end is made light-tight, with good size ventilating shafts at both top and bottom, and frame for enlarging, and using natural light to develop by. At the west end is a door-way also closed up, and arranged for ventilation.

Extending full length of room, along north side, is a sink 17 inches wide, provided with six water cocks and two waste pipes. Above this and extending around the room are lockers, fourteen inches square, for developer bottles and graduates. Below the sink is a shelf for hypo trays, etc., and in the sink are sliding lattice work shelves to develop upon. The artificial light used is from gas and lanterns.

The silvering room is 12 x 16 feet, with two north windows made to let in daylight, or not, as wanted. In one corner is a sink, 22 inches by 5 feet, and two water cocks, and around the rest of the room is a good wide working shelf. This will be the general work room.

As soon as our finances will permit we shall partition off a part of the large room, or hall, and make a developing room for exclusive use of the lady members, of which we now have nine.

I enclose a rough plan which will show the arrangement of rooms, entry, etc.

Very truly yours,

E. L. PARSONS,

Corresponding Secretary of Burlington Camera and Sketch Club.

The Society of Amateur Photographers of New York—Field Excursion, October 3d and 4th.—About twenty-five members, under the leadership of Secretary T. J. Burton, joined with as many more from the Hoboken Camera Club, a few from the Brooklyn Academy of Photography, the Newark Camera Club, and Yonkers Camera Club, started at two o'clock on Saturday afternoon by the West Shore Railroad, for Port Jervis, N. Y., thence by stage to Connaught, N. Y., near Millford, and Dingman's Ferry, which was reached by about 11 p.m. After a midnight supper at the accommodating hotel, and a good night's rest, the next day was spent in photographing the numerous points of interest, until 3 p.m., when the stages conveyed the party to the station, where was waiting a special train of Pullman cars which speeded the party rapidly, without stop, to New York. At Peekskill, Dr. P. H. Mason, of the Peekskill Camera Club, joined the party, and on the return left the train at that point, a special stop for him being made. Fine weather accompanied the excursion and all had a very pleasant and jolly time. President A. J. Thomas of the Hoboken Club attended to the transportation arrangements very successfully, and Mr. Harry Fowler, Secretary of the Brooklyn Academy of Photography, rendered valuable assistance.

Special Exhibition of Photographs at the American Institute Fair.—The exhibition began on the evening of September 30th (a more extended notice is given on another page), and will close on the 28th of November. There has been a good average attendance. Mr. Alfred Steiglitz exhibits some of the finest work. In the catalogue, which one has to purchase to vote, is a blank vote, that the criticising public is asked to deposit in the box for the exhibitor most worthy of having the Hetherington magazine camera. The votes will decide who is to get the camera.

Regular Monthly Meeting, Tuesday Evening, October 13th.—The meeting was called to order at 8.20, President James H. Stebbins, Jr., in the chair. He opened the meeting by reading a short paper on his experiments with the new para-amidophenol developer. (See page 431.) He exhibited specimen plates developed with it and thought possibly he might have gotten better results by using carbonate of potash as an alkali. Advised using two separate solutions. On the comparison of his experiments with what can be obtained from the eikonogen developer he thought that the new developing agent was five times more powerful. In using the caustic soda the developer changed its color soon when exposed to the air. The crystals are soft and in color are yellowish brown, and were, with him, readily soluble in water.

Dr. Charles Ehrmann being present was invited to relate his experiments on the new developer. The salt he had used was imported from France, and was the same as that used by the Lumiere Bros., and was, he thought, a little different from that made by Mr. Stebbins. At any rate he had had different results from Mr. Stebbins's. He found in the first place that the salt was hard to dissolve in cold water, and advised using hot water, nearly boiling, that he would get a solution that would not crystallize out, if kept at a temperature of 65 deg. F. Instead of caustic soda, he recommended carbonate of potash as an alkali, and noted with that the solution kept remarkably clear. He had reason to expect

that for certain grades of slow plates this developer would give absolute clear glass in line-work, with great contrasts for density, so that no intensifying would be needed. He exhibited specimen prints from portrait, landscape, and line-work negatives which were excellent, and seemed to confirm all that he had said. He had experimented some in mixing bromide of copper with a gelatine emulsion, with a view to obtaining more density, and had in a measure succeeded, the veil that generally occurs in gelatine he had avoided by using bi-chromated gelatine. His remarks were listened to with interest, and he was thanked by the president. His formula will be found on another page.

Following him, Mr. Beach told of his experiments on a sample of the same para-amidophenol that Dr. Ehrmann had used, and exhibited transparencies made on fast and slow plates from a poor negative, also a quickly exposed negative made on a rainy day, with a small stop. The results he obtained and deductions therefrom will be found explained on another page.

Mr. C. Van Brunt, at the request of the chair, stated that he had tried reducing a negative with per-chloride of iron, according to a formula he saw recommended by Mr. P. C. Duchocals, and ascertained the interesting fact that the film began to dissolve and leave the plate before any reducing action was noticed. He thought the theory of the supposed chemical action might perhaps be correct, but so far as actual practice was concerned it was a dismal failure. He hoped people would refrain from publishing formulas of that character. Dr. Ehrmann could not recommend the per-chloride reducer.

Mr. Beach exhibited an improved No. 3 Kodak Camera, arranged for the use of the film-roll holder, or for plates loaned by Mr. Cullen. Both attachments were easily made. It was suggested that a slide might be inserted in the front portion of each attachment, so that they could be put on or taken off, without the necessity of doing the work in the dark-room. With the plate attachment is a simple device for holding the ground-glass back for the easy insertion of the plate-holder, and a hinged door can be let down for seeing the image, when the camera is supported on a tripod for viewing purposes. An extra case, holding three double plate-holders, and the plate attachment put into a neat black leather case, comes with the outfit. Another device Mr. Beach had was an automatic registering photographic apparatus invented by Mr. E. E. Moore, which, though having a high sounding name, was really a simple little attachment for any roll-holder camera by which the registering of the number of exposures is easily made. Mr. Moore simply inserts through an extra aperture, cut through the outer case of the camera, directly over the axle of marking roll a little square piece of metal, on which fits a metal disk, having finely cut gear-teeth on its periphery. This disk revolves with each revolution of the marking roll, when the latter is rotated by winding off the exposed film. It also gears into another toothed-disk, in the same plane, on the outside of the box, on which are numbers. A little pointer over the main disk points to the numbers on the second one, and thus tells at a glance how many exposures have been made and how many are left. The attachment can be put on any camera, is simple, accurate, and inexpensive. It is to be made by the Acme Burnisher Company, and sold by the Blair Company.

The secretary reported that thirteen active and three subscribing members had been elected since the last meeting of the society. The Smoking Concert, September 19th, was largely attended, and the Fall *Outing* on October 3d, was quite successful, and was participated in by a number of members. The Special Exhibition was opened September 30th, at the American Institute Fair. There was wall space enough for more exhibits, if any chose to send them.

It was stated on the card that Dr. J. J. Higgins would be present and explain the "fixing bath and its combinations," but owing to a professional engagement he was unable to attend. Dr. Ehrmann remarked that he had read Dr. Higgins's article in *Wilson's Magazine*, in which he concludes that all additions, such as acid sulphite and similar compounds, tend to make it work slower, and cause sulphur compounds to be retained on the film to the detriment of silvered paper used in printing. He could not agree with the Doctor's conclusions, but thought the addition of sulphite was a benefit; it kept the fixing bath from becoming discolored, and in his hands always produced clear negatives. He did not believe in the combined, milky colored, alum and hypo bath. It formed an insoluble compound in the

surface of the negative that was likely to make streaks, which could not be removed. The best plan was to have the solution cool, fix in acid sulphite hypo, and then use the separate alum bath last.

Mr. Murray suggested the Crainer chrome alum and hypo bath as being one of the best he had tried. It was naturally a dark color, but yielded negatives of excellent sparkle and pluck. It is made as follows, by preparing two solutions:

No. 1.

32 ounces hyposulphite of soda, 1 kilo.
3 quarts water, 3 liter.

No. 2.

1 quart water, 1 liter.
 $\frac{1}{2}$ ounce sulphuric acid, 15 c. c. m.
4 ounces sulphite of sodium crystals, . . . 120 grammes.
3 ounces chrome alum, powdered, 90 grammes.
(The chrome alum may be omitted during the cold season.)

After the ingredients are completely dissolved, pour No. 2 solution into No. 1 and allow it to settle before using.

This bath combines the following advantages: it remains clear after frequent use; it does not discolor the negatives and forms no precipitate upon them. The chrome alum hardens the gelatine to such a degree that the negatives can be washed in warm water, provided they have been left in the bath a sufficient time.

The plate should be allowed to remain in the bath five to ten minutes after the bromide of silver appears to have been dissolved. The permanency of the negative and freedom from stain as well as the hardening of the film depends upon this.

When the bath becomes weakened by constant use, it must be replaced by a new one. Prepare solutions Nos. 1 and 2 in advance (allowing plenty of time for the chemicals to dissolve) so as to have them ready when wanted.

Mr. Stebbins agreed with Dr. Ehrmann that no bad results should occur from the use of acid sulphite in the fixing bath, and was at a loss to understand, from a chemical point of view, how Dr. Higgins could obtain the compounds on the negative which he describes. The opinions of others seemed to be that the ordinary combined alum and hypo baths were not conducive to the best results. The meeting then adjourned.

Exhibition of Lantern Slides, Friday Evening, October 30th.—The exhibition included a selection of fifty slides out of one hundred sent by Mr. R. E. M. Bain, of St. Louis, Mo., formerly President of the St. Louis Camera Club; thirty-six out of fifty sent by the Boston Camera Club; fourteen out of fifty by the Hawaiian Camera Club, loaned through the courtesy of the Boston Camera Club; thirty by Mr. Charles H. Davis of the society, and nine colored Japanese slides loaned by Mr. W. B. Post, putting before the audience quite a variety of work. Most of Mr. Bain's slides were developed with ferrous-oxalate, and several were toned from a blue-black to a brownish-red, even after being made for two or three years. Mr. Bain did not disclose in his memoranda the nature of the toning process, but promises to make it known. In comparing his work with the untuned slides, by Mr. Charles H. Davis, there was a marked improvement of the latter's over Mr. Bain's. Mr. Bain's slides covered views in the St. Louis Park, the great bridge, the St. Louis Levee, showing typical river steamers with pipes lowered to pass under bridges, several river and creek landscapes, a tree fern in the Missouri Botanical Gardens, figure study, called "The Apprentice," "Rafting on the Little Pony River," several views on board the steamships "Majestic" and "Germanic," while on an ocean voyage, including two excellent ones of the bow and stern of the Germanic, looking off at sea; views of Queenstown Harbor, the station and residences of the fast "Irish Mail Locomotive," also a few views of buildings in Paris. The selection was quite varied, and contained examples of Mr. Bain's early and latest work.

In the Boston Camera Club's set was a view of the King Philip House at Medfield, Mass., more than 200 years old; a picturesque slide, entitled "Salting the Sheep," by C. H. Currier, and a prize picture by the same party of a "View at North Grafton, Mass., full of

exquisite detail; views of racing yachts and surf by Mr. H. A. Latimer; and other animal, historical, and figure subjects by different makers. Most of the slides were made by the wet-plate process, by Mr. W. G. Reed, from members' negatives.

In comparison as a whole with the clear, crisp slides by Mr. Charles Davis, on dry plates, we found them no better.

The Sandwich slides were mostly made by one person, and illustrated a modern sugar mill, scenery among and along the coast of the islands, at "Kelalakikua Bay," the scene of Captain Cook's death, "Kapaa Falls, Kauai," a "Wharf Scene at Honolulu," very clear and typical. Another of "H. R. H. Princess Kainani at Home," dressed in Japanese costume, was very good. The society is indebted to Mr. William Garrison Reed, of the Boston Camera Club, for his kindness in sending the slides for exhibition. Their slides were the same set that went the rounds of the New England Interchange last season.

The slides, by Mr. Charles Davis, comprised figure and sea-shore subjects, and an excellent view in the Central Park Ramble. His Coney Island views, views of life on a Coney Island steamboat, the "Iron Pier" at Coney Island, "Digging Clams" at Coney Island, were all well taken, clear and sharp. They were made with a single lens and demonstrated beyond question its adaptability of this kind of work. All of his figure studies were gracefully posed and nicely lighted.

The nine colored slides, loaned by Mr. William B. Post, of views in Japan, colored by native artists, were quite interesting. One of a tea plantation was excellently done, another of a "Tea House" in Yokohama, showing some twenty-five handsome Japanese girls, quaintly dressed, in a group, was particularly clear and pleasing. Another was called "A Dinner by the Middle Class," illustrated how raw fish and rice make a palatable meal.

It will be seen that considerable was crowded into one exhibition, but as Mr. William M. Murray presided there was nothing lacking in making the pictures interesting.

PERSONAL.

RECEPTIONS TENDERED TO MISS BARNES.

The month of October was one of peculiar activity to Miss Barnes. On the evening of October 8th she was entertained by the Yonkers Camera Club, her lantern slides being exhibited, with others from the New York Society, at the close of the evening. She read a paper on "Art in Photography," from which liberal quotations appeared in the local journals next day. The Secretary, Mr. E. D. Gardner, looked after her comfort.

On October 15th she attended a Woman's Industrial Union Convention at Detroit, Michigan, and on the 19th was the guest of the Chicago Camera Club, before whom she read a paper on "Live and Learn," and received many other attentions. She was introduced to women members of the club, and, being among its first honorary members, was very cordially greeted.

On October 23d she was entertained by a special reception and slide exhibition given in her honor at the Iroquois Hotel, Buffalo, N. Y., by the Buffalo Camera Club. She made a few remarks, thanking the club for its kindness in providing a special entertainment for her, and her advice was regarded by the members as sound and practical, as she had learned much from her own experience.

On October 30th she was the guest of the Syracuse Camera Club, and spoke on "The Question of Selection." Her remarks were well received by an interested audience of Syracusians.

She had the honor of receiving the second prize of \$100 in the Frank Leslie's Photographic Contest, in her "Study in White," issued October 28th.

Miss Elizabeth A. Slade has lately returned from a summer tour in Holland, where she has been photographing the quaint Dutch costumes and market scenes, and studying the best work of the old Dutch art masters.

Mr. W. B. Post returned early in October, after nearly a year's absence, from his trip to California and Japan, and used hundreds of celluloid ($6\frac{1}{2} \times 8\frac{1}{2}$) cut films in place of plates. He describes the climate and conditions for photographic work in Japan as something fearful, the nights are about as hot as the days, and the prevailing atmospheric conditions is something like the close muggy days experienced in this country in August and September.

He only developed a film now and then to test his exposures. But his camera became damaged or out of order by the excessive dampness. He had better luck with his time exposures, than with the hand camera work. The films he developed himself produced for him many excellent negatives, from which he has made a number of interesting lantern slides. To save time and bother in developing some 300 more exposures, upon receiving personal assurance from a member of the Company that especial attention and care would be given to his work, he ventured to send 300 correctly exposed films to the Eastman Company, at Rochester, to develop and finish up. The returns by the Company stated that all the exposures were correct, and all the negatives were good. However, Mr. Post reports that only eighteen out of the 300 were perfect, the balance while good otherwise were all more or less defaced by hypo stains, thumb and finger marks and scratches due, he has no doubt, to careless handling in development. Thus some of his best and most valuable work was spoiled. We think it is a matter that needs investigation by the Company, for such a careful photographer as Mr. Post has the reputation of being, would certainly expect a better result. Evidently the boasted division of labor in this case has met, in one quarter at least, a decided set back. Of all things alleged carelessness in the developing and fixing operations should be discovered and stopped.

THE CALIFORNIA CAMERA CLUB.—*Exhibition of Lantern Slides, October 16, 1891.*—Says the *San Francisco Chronicle* of October 17th: "The large auditorium of Metropolitan Hall was crowded to its utmost capacity last evening, when the California Camera Club gave one of its lantern slide exhibitions. The pictures displayed were of scenes in Portugal, Naples, and Pompeii. Dr. C. H. Steele gave an interesting talk on each of the various views, told many entertaining legends and recited much folk lore of the different localities illustrated. As is ever the case with these entertainments, that of last evening was an entire success. There were several intermissions, which were occupied by the following artists: Miss Bertha Mering and Miss M. J. Chase in vocal solos, and an instrumental sextet from the Dolores Club. The handsome views, many of which were colored, elicited much applause from the audience, and at the close of the entertainment all were agreed that a most enjoyable evening had been spent."

The Capital Camera Club.—This club gave an exhibition of pictures, the work of its members, at its rooms, 401 Seventh Street, N. W., Washington, D. C., on Thursday, October 29th to October 31st, inclusive, which we hear was quite a success. The committee in charge was Dr. Arthur J. Hall, Albert L. Moore, and Arthur M. Poynton.

Springfield Camera Club.—An exhibition of prints, for three days, beginning November 2d, was to take place. We presume it was up to the usual work of this club, and shall hope to give a report in our next number.

The Richmond Camera Club.—Mr. E. F. C. Davis, the President, invited the members to meet at his residence, 913 Floyd Avenue, on the evening of November 3d, for an informal exhibition of lantern slides.

Brooklyn Academy of Photography.—At the October meeting Mr. Edward H. Lyon gave an interesting demonstration on emulsion making, going through the process by gas-light to show how simple it was. He illustrated the different details of the preparation of plates for interior, portrait, and instantaneous purposes. Mr. Lyon urged that amateurs should, if practicable, make their own plates, having in view the purpose for which they are intended, as manufacturers are usually guided solely by consideration of speed without regard to subject. In treating the question of developing, Mr. Lyon strongly advised that the first application of the developing agent should be made in absolute darkness, and that the ruby light should be excluded during the first two or three seconds of the operation. On Wednesday evening, October 28th, Mr. W. T. Wintringham delivered an informal lecture on photographic lenses.

The New York Camera Club has arranged for an illustrated lecture at its rooms, 314 Fifth Avenue, on November 12th, on "Mountaineering in Colorado," by Mr. Frederick C. Chapin. November 23d, Mr. Cornelius Van Brunt will exhibit his "Catskill Views."

The Photographic Society of Kansas City.—It is a limited association of amateurs, the number to be twenty-five, and was organized on September 23d. The officers elected were: J. P. Raymond, President; W. T. Stark, Vice-President; C. H. Clarke, Secretary and Treas-

urer—who also form the Executive Committee for the transaction of business in the vacation season. The club has secured rooms, fitted them up with sky-lights and spacious dark-rooms, accessories and apparatus for practical work, among which is a large 14x17, and a 6½x8½ camera with valuable lenses, and a combined stereopticon and enlarging lantern, so that the club is equipped for a variety of work. Only persons who do all their own work are eligible to membership. The membership fee is \$10; monthly dues, \$2.00. Meetings are held on the fourth Wednesday of each month. It has undertaken to establish a permanent organization for the advancement of photography in a city noted for its enterprise, and we certainly wish it success.

The Photographic Section of the American Institute.—The regular meeting was held on October 6th, President H. J. Newton in the chair. Mr. A. V. Benoit demonstrated a method of copying letters. Mr. F. J. Harrison showed and explained the working of the "Kameret" hand camera, also a Watkins Exposure Meter. Dr. L. H. Laudy explained the working of the Clark Electric Light for the lantern, and operated it in the Institute lantern with great success. There was no hissing, but instead a continuous steady light. Several of Mr. C. Van Brunt's slides were shown with it.

The Yonkers Camera Club.—On October 8th, at the regular meeting, Miss C. W. Barnes entertained the club with a talk on "Art in Photography," which will be found on another page. Following the address was an interesting exhibition of lantern slides, many of which were made by her. The club made her stay in Yonkers a most pleasant one, and is encouraged to have more entertainments of the same sort.

Brooklyn Institute.—Department of Photography.—A suite of rooms has been secured at 201 Montague Street, near the Brooklyn Library, which is to be fitted up in the best manner for photographic work. A studio for portrait work is provided, 25 x 32 feet, which constitutes the principal exhibition room for lantern slides, prints, etc. These informal meetings occur on the first and third Fridays of each month, while special lectures are held in the large hall of the Y. M. C. A. The Department is making a collection of historical photographs, covering buildings, streets, the Brooklyn Bridge, parks, navy yard and shipping, and places of special interest and natural beauty. The present membership is one hundred and forty-four. The new rooms were ready on November 1st. The President of the Department is George H. Cook; Secretary, Gould W. Hart.

Photographic Club of Baltimore City.—The president of the club, Mr. H. D. Williar, sends us the following interesting report: In regard to the "Photographic Club of Baltimore," I beg to state that our club was organized in June last with about forty members of the old "Amateur Photographic Society," which disbanded in May last. At the reorganization the matter of quarters was placed in the hands of a committee to secure such location as was deemed most advisable and accessible, and with the comforts and other advantages necessary for a club of this kind. This committee, after securing quarters, was to notify members, and the first meeting to take place on the first Tuesday in September.

The committee secured commodious quarters on the northeast corner of Madison and Eutaw Streets, comprising two floors in one of the most fashionable and central locations of the city. The second floor comprises an exhibition room, a bromide room, general meeting room, a stock room, and a dark-room. The first four rooms are "en suite," covering a floor space of about eighty by thirty feet. Our dark-room is very commodious, about eighteen feet square, with plenty of accommodation for four or five to develop at one time, and adjoining this is a small room for hypo trays and other accessories.

At our first regular meeting in September the election of directors and officers took place as follows: Harry D. Williar, President; Frank M. Clotworthy, Vice-President; B. G. Buck, Treasurer; Prof. G. L. Smith, Recording Secretary; A. S. Murray, Corresponding Secretary. Directors, Charles Quartley, F. W. McAllister, Alex I. Godby, Wm. H. Corner, W. B. D. Penniman, H. Stockbridge, Jr. Up to this time we had increased our membership to about sixty, and everything seemed to be in a flourishing condition. It was deemed advisable by the Board of Directors to give an exhibition and a house warming, which took place on October 13th. "Glimpses of California," kindly loaned our club by the Boston Camera Club, was exhibited, and the entertainment was attended with much success, resulting in about thirty-five applications for membership, since which time about ten more

applications have been posted, and we are starting out now after being in existence less than two months, with a membership of over one hundred. After the exhibition of the 13th ult., a lunch was spread for the invited guests, consisting of all the delicacies of the season. At this meeting the attendance was entirely of men, but we have since amended our by-laws to include lady-members, and we propose giving a lantern-slide exhibition of "Yosemite," as well as a supper to the ladies on November 10th, and we expect therefrom a large accession to our membership.

"Our exhibition room having only a seating capacity of about one hundred and fifty, and finding it not near large enough for the purposes, the club has decided at a considerable outlay to utilize the third floor of our building for that purpose, and the changes and alterations necessary to make it an exhibition room are now in progress. When completed we will have a room about seventy-five feet deep by thirty feet wide, and we can readily accommodate five or six hundred guests at our lantern-slide entertainments. Recently visitors from several photographic clubs in different parts of the country have called on us, and they all express themselves as highly pleased and gratified with our quarters, and well they might be, for we do not think there are many clubs with quarters superior to ours. A cordial invitation is extended to members of any other club to visit us, to use our dark-room, or to fraternize with our members.

We have been in receipt of an occasional number of the *AMERICAN AMATEUR PHOTOGRAPHER*, which has been greatly appreciated by our membership, and if you can consistently keep us on your free list, the *AMATEUR PHOTOGRAPHER* will always be a welcome visitor at our rooms."

[The *AMERICAN AMATEUR PHOTOGRAPHER* will be sent regularly.—EDITORS.]

Buffalo Camera Club.—At a special meeting held on October 23d, at the Iroquois Hotel, the club listened to Miss Catherine Weed Barnes on "Art in Photography." There was a good attendance. A report in a Buffalo paper says: "Neat invitations were issued, and the meeting was attended by members and their wives. Dr. Mann, the President, introduced Miss Barnes. An exhibition of some of the slides the club expects to contribute to the 1891-92 Lantern-Slide Interchange were shown, which were very well received. The club has forty-two members, and the treasurer's report showed a balance on hand of \$343.13. Permanent quarters are now being looked up. Dr. G. Hunter Bartlett represents the club in the American Lantern-Slide Interchange."

The Photographic Society of Philadelphia.—The society is fitting up new quarters at No. 6 South Eighth Street, Philadelphia, in a superb fashion for practical work and the comfort of members. The main room is 53x67 feet.

BOOKS AND EXCHANGES.

A CHANCE TO SECURE GRANT'S MEMOIRS.

We are advised by *The Cosmopolitan* of a plan it has recently set on foot to enable any one subscribing to their magazine to secure a set of Grant's Memoirs, originally selling at \$7.00 a volume, for \$3.50, with 50 cents additional for postage. We will supply to subscribers *The Cosmopolitan*, *THE AMERICAN AMATEUR PHOTOGRAPHER*, and any of the memoirs named below, post paid for \$5.50, or \$5.00 without postage. This is what is said of the project:

WAKE UP!—The age is one of rapid progress—and we are in it. Our patrons are among the most progressive of the nation. They are quick to take advantage of a good offer. We make a great many; but when we recently offered a set of the memoirs, either of Grant, Sheridan, Sherman, McClellan, or Lee, in their respective original editions, for 50 cents a set, in connection with a year's subscription to the *Cosmopolitan Magazine*, \$3, and a year's subscription to this paper, \$1.50—\$5.00 in all—we fairly outdid ourselves.

Thousands of orders have already been received by the publishers, so that if our friends wish to avail themselves of this extraordinary opportunity, they must wake up. No such offer has ever before been made to the reading public, and it is doubtful if it will ever be duplicated.

Again we say, "Wake up!" If not on reading terms with the magazine, send postal card request for a free sample copy to the Cosmopolitan Publishing Company, Madison Square, New York City.

OUTING for November contains a timely article by that facile writer, Dr. J. Ellerslie Wallace, on "Photography—Orthochromatic Films and Plates."

PHOTOGRAPHIC LENSES.—We have received a sample page of this new book, which is to treat the subject exhaustively, by Mr. J. Traill Taylor, than whom none is more competent. It is to be published by Whittaker & Co., Paternoster Square, London, E. C., England.

In a journal called *Norfolk Chat* we find a very good half-tone reproduction, on the first page, of a photograph of "Norfolk Academy," which took the prize for October in their amateur photographic contest, by Dr. Randall Barrett. The building exemplifies Corinthian architecture, is massive and simple.

ILLUSTRATED CATALOGUE, by A. T. Thompson & Co., Boston, Mass., of their new oil and lime light magic lanterns.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our reader, to whom timely notice of novelties may be valuable.]

THE HETHERINGTON MAGAZINE CAMERA.—The latest models of this instrument are ideals of what a neat looking, easily worked camera should be, and it is gratifying to know that it is giving good satisfaction. A very simple device is arranged to throw out the shutter stop for quickly winding up the shutter spring. In the shutter disk but two apertures are now provided instead of four, which enables the shutter to obtain greater speed before the aperture comes opposite the lens. A center section in the bottom of the camera is made to be removable for getting at the magazine to better advantage, in case it should be necessary. A tripod screw socket is also provided for fastening on to a tripod. The plate indicating disk has been lined with hard rubber in order that the white figures may be more easily seen. The newer patterns are covered with a dark brown fine grain leather, which gives them a better finish. These slight improvements make the camera much better. It is a very handy little instrument with which practical work can be easily done.

Mr. A. L. Simpson, the New York trade agent, has been energetic in introducing the camera to the New York public, and many of the suggested improvements are the result of his experience in hand camera work. We are informed that the manufacturers, Hetherington & Hibbard, have been obliged to greatly enlarge their factory in order to supply the camera in quantities enough to fill orders.

THE PREMIER HAND CAMERA, supplied by the Rochester Optical Company, is an excellent instrument of its kind, having a simple shutter and focusing devices. It is not a magazine camera, but is furnished with compact plate holders.

NEW KALLITYPE PAPER.—Mr. A. Peebles Smith has gotten up a kallitype paper which partially prints out on exposure a minute or two behind a negative, to sunlight, and like Dr. Nicols's paper, No. 2, is developed and toned in the borax and bichromate bath. We have seen very nice tones obtained on this paper, especially some closely imitating the well-known platinotype. We are advised also that Mr. W. C. Cullen is making a similar kind of paper after a formula devised by Mr. James H. Stebbins, Jr., which is developed and toned with the borax and Rochelle salts bath. The great advantage of these papers is that they are more rapid than ordinary silvered paper, and that there is no staining of the fingers, since the silver salts are not in solution but are combined with the iron when spread on the paper. It may take a little more skill to tell just how long to expose in printing, but this is soon acquired. We learn that Mr. Smith is at work on a formula that may make the paper as sensitive as the ordinary bromide paper.

IOATA PAPER, a gelatino-chloride paper of uniform quality made by Mr. Geo. H. Chase, of Newport, R. I. A sample has kindly been sent to us, which we shall try and report.

"PRESTO" ARISTOGRAPH is the title of a new collodio-chloride paper, said not to curl, crack, peel, or frill, made and sold at a reasonable price by Mr. C. A. Himmelwright, Norfolk, Virginia.

E. W. NEWCOMB & Co.—This is a new firm founded on the old one of Newcomb & Owen. The card below explains itself.

NEW YORK, October 27, 1891.

The copartnership heretofore existing between the undersigned under the firm name of **NEWCOMB & OWEN** has been this day dissolved by mutual consent. The assets of said copartnership have been purchased and its obligation well be met by **E. W. Newcomb.**

**E. W. NEWCOMB,
W. G. OWEN.**

The business heretofore carried on by the firm of Newcomb & Owen at 69 West 36th Street, has been purchased by the undersigned who will continue the business at the same address, in conjunction with Mr. John A. Vanderpoel, under the firm name of **E. W. Newcomb & Co.**

E. W. NEWCOMB.

They have built up an extensive amateur trade; we wish the new firm success.

CRAMER'S ISOCHROMATIC PLATES.—For flash-light exposures these plates yield excellent results. Lately Mr. Cramer has sent out a test card, which is a capital idea. On a yellow background he has printed black and red letters. At the foot is the inscription: "Photograph this card with an isochromatic and an ordinary plate, and observe results." It is a very practical way of doing it. Mr. Cramer wants every skeptical person to try it himself and be convinced of the value of the improvement.

C. E. HOPKINS, MANUFACTURER OF OMEGA PAPER.—Mr. Hopkins sends us the following notice of his change of business, which explains itself:

BROOKLYN, N. Y., October 28, 1891.

SIR: I respectfully announce to our patrons that I have completed improvements in the machinery, methods, and the organization of the workings of my factory, which enable me now not only to fully double the product of the late firm (Bradfish & Hopkins), but that the high character of our paper will be further enhanced thereby, and that in future all communications will receive prompt acknowledgment, and little or no delay will occur in filling all orders. After this date there will be a limited number of gross cabinet seconds put up. These packages will be marked "Seconds," and will contain paper rejected from first quality. There will be a few streaks and small black spots, but no white ones. The list price will be \$1.40.

Thanking you for your past, and asking your future favors, I am respectfully yours,

C. E. HOPKINS.

I am pleased with the **AMERICAN AMATEUR PHOTOGRAPHER**; long may it continue to be and be independent. I regard all other photo publications as big grindstones.

FRANK N. BLAKE.

United States Photographic Patents

Issued in September and October, 1891.

September 29th.

460,264—Envelope for Photographs, etc. **H. C. Lavette, Chicago, Ill.**

October 6th.

460,570—Manufacture of Photographic Films. **B. J. Edwards, London, England.**

460,621—Process of giving a Mat Surface to Albumenized Silver Paper Photographs. **J. D. Wrigglesworth and F. C. Binns, Wellington, New Zealand.**

460,672—Register for Camera Roll-Holders. **H. C. Boyer, Philadelphia, Pa.**

21,096—Design Patent. Photographic Card. **C. A. Wright, Philadelphia, Pa.**

Trade-Marks.

20,185—Photographic Plates or Films (Anchor Brand). **G. Cramer, St. Louis, Mo.**

20,186—Photographic Plates or Films (Crown Brand). **G. Cramer, St. Louis, Mo.**

October 13th.

461,306—Roll-Holder for Cameras. **T. H. Blair, Boston, Mass.**

461,307—Camera Shutter. **T. H. Blair, Boston, Mass., and J. H. Crowell, Vineyard Haven, Mass.**

461,308—Roll-Holder for Cameras. **T. H. Blair, and F. H. Kelley, Boston, Mass.**

October 20th.

461,609—Photographic Objective. **E. Gundlach, Rochester, N. Y.**

October 27th.

461,905—Photographic Camera. **J. H. Hare and B. P. Johnson, Brooklyn, N. Y.**

461,910—Photographic Shutter. **E. B. Barker, Newark, N. J.**

462,116—Means for Holding and Carrying Photographic Films. **E. E. Ellis and A. L. Lehuker, Rochester, N. Y.**



PHOTOGRAPHED BY ALFRED STIRGLITZ.

ENGRAVED BY PHOTOCHROME ENGRAVING CO

“NOVEMBER DAYS.”

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PHOTOGRAPHED BY ALFRED STIEGLITZ.

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THE AMERICAN AMATEUR PHOTOGRAPHER,

361 Broadway New York, N. Y.



Lago di Misurina, The Tyrol.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. III. NEW YORK, DECEMBER, 1901.

Our Illustrations.

IN GIVING illustrations of one man's work, by two different processes, we are able to show their capabilities as regards the reproduction of nature, the preponderance of true reproduction in actual photography, and the engraving.

Adolf Stieglitz, the author of the two pictures, informs us that the first, the face is "Lago di Misurina," a view of Swiss scenery, taken with a nineteen-inch focus Steinheil Rapid Rectilinear Lens (F. 11.3), exposure of two minutes on a Vogel-Obernetter Eosine silver (orthochromatic) plate, developed on a yellow screen, at 5.30 p.m., in August, 1890. It was developed with hydroquinone. The mountains were about ten miles off. It will be noticed how distinctly the clouds are brought out in the foreground. This is one of the good features of these slow plates. The New York Photochromic Engraving Company reproduce this picture.

"The Days" is a view of a road near Munich, Bavaria, taken with a 12.5-inch focus Steinheil Rapid Rectilinear Lens (F. 9.5), exposure one-half a minute, towards evening, on a Vogel-Obernetter plate, developed with ferrous-oxalate. The reproduction by the Photochromic Engraving Company, and is an excellent example of the autotype process.

Mr. Stieglitz has had the study and experience it has been Mr. Stieglitz's to enjoy. His pictures display careful and artistic work. He received a medal at the Fourth Annual Exhibition in May, and a medal at the American Institute Fair Exhibition in November.

View of Lake Superior from the shore



THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

Vol. III.

NEW YORK, DECEMBER, 1891.

No. 12.

Our Illustrations.

IN GIVING illustrations of one man's work, by two different processes, we are able to show their capabilities as regards details and artistic rendering, the preponderance of true reproduction resting, we think, with the photogravurer.

Mr. Alfred Stieglitz, the author of the two pictures, informs us that the title of the frontispiece is "Lago di Misurina," a view of Swiss scenery, and was made with a nineteen-inch focus Steinheil Rapid Rectilinear Lens f-321, with an exposure of three minutes on a Vogel Obernetter Eosine silver (orthochromatic) plate, *without* a yellow screen, at 5.30 P.M., in August, 1890. The plate was developed with hydroquinone. The mountains were about ten miles distant. It will be noticed how distinctly the clouds are brought out in the distance, one of the good features of these slow plates. The New York Photogravure Company reproduce this picture.

"November Days" is a view of a road near Munich, Bavaria, taken with a similar lens, an f-16 diaphragm, exposure one-half a minute, towards evening, on an Obernetter plate, developed with ferrous-oxalate. The reproduction is made by the Photochrome Engraving Company, and is an excellent specimen of the autotype process.

Few amateurs have had the study and experience it has been Mr. Stieglitz's lot to enjoy. His pictures display careful and artistic work. He received a silver medal at the Fourth Annual Exhibition in May, and a bronze medal at the American Institute Fair Exhibition in November.

Concerning "High Art" in Photography.

By GEORGE E. BLACKHAM, M.D.

IN THIS imperfect world of ours there are many varieties of the *genus homo* that are calculated "to make the judicious grieve," as the late Mr. William Shakespeare very justly remarked, and chief among these I would rank the class of photographers who have the high art craze. To hear one of those misguided mortals talk, one would think that all optical science was a blunder, and that all the improvements in the construction of photographic lenses were so many steps backward. Why should the optician and the chemist conspire together to produce objectives, whose component lenses shall bring more perfectly to the same focus all the rays received by the front lens, whether of long or short wave length, whether falling upon the center or upon the margin of the lens, if real art demands that the image shall be of artistic fuzziness, instead of a sharp and crisp delineation of all the details of the object? Go to! If you really admire this "diffusion of focus" you do not need to pay a high price for an imported lens with a special arrangement to disarrange the corrections; you can get it by using a two-shilling burning-glass to photograph with. It hardly seems worth while to waste much ammunition on this kind of game, but there is another branch of the high art tribe, who are deserving of some attention, from the fact that they include among them some amateurs of real ability, not only with the camera but with the pen also, and whose heresies are therefore the more contagious and liable to do harm to the young and inexperienced. I refer to those who maintain that hand camera work and even landscape photography are only a sort of mechanical work, while composition figure work, in which the photographer not only *takes* the picture, but *makes* the picture by arranging beforehand and with design, is the only truly artistic photography. That sounds well, in theory, though there may be quite as much art in selecting the proper time of day and year, the proper combination of sunlight and shadow, of cloud and sky, and the proper point of view to get the best effects for a given bit of landscape, as there is in arranging your cousin Jane in the most effective attitude, and the most becoming of low-necked and short-sleeved bath robes, in the midst of a pile of *papier mache* faggots for your composition negative of "Joan of Arc" or, as the perpetrator of this kind of thing would be more likely to label it, "Jeanne d' Arc." In point of fact, the difficulties in the way of successful composition work of this kind with the camera, are so great as to make the production of a single really good picture of the kind in a life-time highly improbable.

Let us see what is needed for the production of such a picture as, let us say, a scene from one of Tennyson's "Idyls of the King."

First.—An artist-photographer who shall be enough of an artist to conceive the scene and to arrange his material, and enough of a photographer to get the best possible negative of it, after it is arranged.

Second.—Appropriate costumes and accessories.

Third.—Models with sufficient histrionic ability to assume in cold blood the requisite expression, and pose to fit the scene.

Each one of these three requisites are rare enough, if indeed, the third exists at all, but that they should all three come together for one picture, exceeds the bounds of probability.

In point of fact they do not come together, at least so far as my experience goes, and the result instead of being high art is often absurd in the extreme. Take, for instance, the pictures exhibited at Buffalo for the prize at the last convention. The subject to be illustrated was Tennyson's "Elaine." The pictures were contributed by eminent photographers and were, many of them beautiful specimens of photographic workmanship considered as photographs, but considered as pictures. Oh, dear! Oh, dear! Here is one: Elaine looking out of the tower window and singing her "little song of Love and Death" and getting ready to die and float up stream to Camelot. Would anybody believe that that plump damsel was dying of love or of anything else? Why there is not an insurance company in the country that would not be glad to take her for a risk, nor a man in the convention that could have guessed what the picture was meant to represent if he saw it all by its lone self without anything in the way of writing or print to indicate its purport. But the artist was not to blame because the model could not assume in cold blood that peculiar *in articulo mortis* expression of pose and feature, to which Miss Clara Morris succeeds in working herself up by the end of the fifth act.

Here is another of the same series by another artist, "Lancelot and Guinevere by the Bier of Elaine." This, too, is fine work as photography, and has this advantage over the first-named picture, that any one who was familiar with the poem might guess what scene it was intended to represent. But how is it represented? Is this young person in deed the mighty Lancelot,

"the chief of those,

After the king, who eat in Arthur's halls?"

Or is it not rather one of Wannamaker's or of Lord & Taylor's nice young men just dressed up for the masquerade, and feeling and looking about as much at home in his costume as the real Lancelot would have done in the dress coat and patent leather shoes, which form part of this young gentleman's ordinary evening dress? The photographer had done his work, as a photographer, well; but his (or her, I want to be impersonal) picture, as a picture, was a ridiculous failure. In fact I do not see how the crowd ever kept their faces straight while looking at that lot of pictures, unless indeed they were sobered by the contemplation of such prodigal waste of ability by misdirection.

No, no. Let those who will devote their time to getting their pictures out of focus, or perpetuating in unfeeling gelatine the self-consciousness and constraint of Cousin Tom and Sister Mary when posing as Lancelot and

Elaine, or as Claude and Pauline, or any other hero or heroine whatsoever, but let us, who do not love to make such cruel sport of our friends, hear less of the twaddle about "high art" than we have had to endure for the past few years.

How to Begin.

By J. B. HAGERTY.

II.

(Continued from November.)

THE novice should choose a simple developer, and use it until good results can be obtained with different lengths of exposure. The writer is inclined to think that hydroquinone is the best developer for the beginner, as it permits greater latitude and is more easily controlled than pyrogallie acid. But some may favor pyro, so some suggestions will be given with regard to working both. The beginner should make himself familiar with the functions of each constituent of the developer. Pyro or hydroquinone are known as the reducers, and are the developers proper, but they must be set in action by the addition of an alkali which is called the accelerator. The alkalies which are generally used are carbonate of soda or potash. The bromide acts as a restrainer, and should be used in cases of over-exposure to restrain the action of the developer, which would otherwise work too quickly and ruin the negative. The sulphite of soda is used as a preservative, preventing the decomposition of the pyro in solution and the straining of the negatives.

The following formula for a hydroquinone developer has been used by the writer and has given excellent results. It is simple in composition and easily worked, permitting great latitude of exposure. No. 1.—Sulphite soda, 240 grains; pure water, 4 ounces; dissolve and filter, then add hydroquinone, 60 grains. No. 2.—Carbonate of soda, a saturated solution; normal developer, four ounces of water, two drachms of No. 1 and two drachms of No. 2.

If a pyro developer is preferred, two solutions should be prepared, one of sulphite of soda one ounce, water ten ounces, and one of carbonate of soda one ounce, water ten ounces, and the pyro to be used dry. In a small bottle mix a few grains of bromide of potassium in an ounce of water, a few drops of which should be added to the developer in case of over-exposure.

If the amateur is doubtful as to the exposure, or is inclined to think that his plate is over-exposed he should proceed cautiously, and work by the tentative method, that is, commence with a weak solution in which the plate is allowed to remain until the image begins to make its appearance, or he is satisfied that the plate has not been over-exposed, then by successive additions to the developer of the carbonate of soda solution the image is brought out on the plate. The hydroquinone developer given above can be prepared

for use tentatively by adding to four ounces of water, two drachms of No. 1, and one drachm of No. 2. It will be observed that only one-half the amount of alkali that is given for a normal developer is used. This makes allowance for over-exposure. The pyro developer may be prepared by taking three ounces of water and adding one ounce of sulphite solution, one drachm of carbonate solution, and from six to ten grains of dry pyrogallie acid, which can be measured with an ordinary mustard spoon which holds about two grains.

The developer having been mixed, and the dark-room lighted, we will proceed to develop a plate. After removing the plate from the holder the film should be carefully brushed to remove any dust, and the plate placed in the tray. The solution should now be flowed over it, care being taken to completely cover the plate to avoid markings.

The tray is then gently rocked and in a minute or two the plate will show if it has been over-exposed and what its needs are. If it darkens all over it has been over-exposed and requires at once to be washed and treated to a developer still weaker in alkali, and to which must be added a few drops of bromide. If nothing appears on the plate within four or five minutes it has been under-exposed and requires slight successive additions of the alkali until the image makes its appearance. If, however, the high lights—that is the sky, light colored buildings, water, etc.,—show first, and the details in the shadows (the white portion of the plate) gradually follow, it is evidence of a correct exposure, and a developer almost if not quite correctly adapted.

The negative should always be treated so as to develop as much detail as possible by successive additions of the alkali, and then if not sufficiently dense, brought to that condition by additions of hydro or pyro to the solution. But it must be remembered that alkali in excess tends to fog the plate. The developer is allowed to act until the deep shadows, which remain white the longest, begin to darken and assume a gray color, and the image becomes visible on the back of the plate.

The plate is then thoroughly washed and placed in the hypo solution, which dissolves out all of the un-reduced silver; this solution is allowed to act a few minutes after all the yellow color has disappeared from the back of the plate, the negative is then fixed and can be examined by white light. After this it should be thoroughly washed to eliminate all the hypo from the film. This is done by placing the negative in running water for at least half an hour, or soaking in water for an hour, changing the water frequently.

In mixing the solutions for developing it should be remembered that all chemicals deteriorate more or less in solution, therefore only a sufficient amount should be mixed for the work on hand, and the solutions will then be fresh and of known strength.

Many amateurs become impatient to see the results of their exposures, but it is a better plan to exercise a little patience until you have a batch of

plates, then mix a sufficient amount of solutions and develop the lot, carefully observing the action of each plate, and noting the treatment required. More can be learned in this way about developing than is possible with twice the number of plates when only one or two are developed at a time.

The next process in photography is the printing of the picture from the negative. This is the point at which many amateurs fail, chiefly from lack of care and knowledge. It requires careful work and close attention to produce good silver prints.

It is supposed that the beginner will use the ready-sensitized paper for his first efforts. This paper, if carefully worked, will give good tones, but for the best results fresh sensitized paper should be used. Before printing, the paper should be fumed with ammonia for half an hour, then, after drying a few minutes, it is ready to be placed in the frame on the negative which has been carefully brushed to remove any dust. On the sensitive paper place two or three thicknesses of ordinary paper, and lastly place the back in position and fasten the springs. The frame should now be placed in the sun if the negative is an intense one, or in the shade if it is thin. From time to time one-half of the back of the printing-frame should be opened and the print examined to observe the progress of printing. When the deep shadows are slightly bronzed and the high-lights are slightly colored, the printing is completed and the print should be removed from the frame and placed away from the light, in a box or drawer. After all the prints have been printed we are ready for the toning. The following stock solutions should be prepared :

No. 1.—Chloride of gold,	15 grains.
Pure water,	7½ ounces.
No. 2.—Bicarbonate of soda.	490 grains.
Pure water,	8 ounces.

When ready to tone make up the bath as follows :

Solution No. 1,	1 ounce.
Solution No. 2,	1 ounce.
Pure water,	15 ounces.

Before toning, the prints must be thoroughly washed to remove all the free silver; this is done by immersing them one by one in clean water. Keep the prints in motion by turning them over for five minutes, then pour off the water and add fresh; continue this until there is no longer any trace of milkiness in the wash water. Then place the prints in water made alkaline with bicarbonate of soda to reduce the acidity. Leave in this solution a few minutes while you prepare the toning bath. When the bath is prepared place the prints in clean water to rinse them off, then place a print in the toning bath pressing it under to completely cover it. Repeat the operation until four are in the bath. They are kept in motion to insure even toning until they have assumed a purple or lilac tone, when they are removed and placed in a tray of clean water. After all are toned they are washed in a couple of

changes of water and then immersed one by one in the fixing solution (hypo-sulphite soda 1 ounce, water 10 ounces), where they should remain twenty minutes. From the fixing bath they should be placed in salt water a few minutes to prevent blisters, then washed by soaking in water for two hours, changing the water every fifteen minutes.

The prints should be carefully trimmed before toning, and after the washing is completed they are placed in a pile on a sheet of glass, and the water allowed to drain off. Before the prints are quite dry they are mounted, using ordinary starch for paste, being careful to place the print in the proper position on the card. After all are mounted, the cards should be placed under a heavy weight until they are perfectly dry.

The work on the photograph is now completed, and the beginner will have observed that two of the essentials to success are patience and careful work. Do all work yourself, read and reflect, and it will be found that after the processes are once mastered, amateur photography will have become a source of pleasure and delight.

Some Suggestions in Photography.

BY GEORGE M. HOPKINS.

THE FIELD of photography has been enormously enlarged by the perfection of the different methods of artificial illumination. An entirely different class of subjects is rendered available, and persons whose business monopolizes all of the daylight, are furnished opportunities for the gratification of photographic tastes, providing their ambition does not lead them to a desire to "take all out of doors," at night. In times past, some fault has been found with flash-light pictures on account of the anxious expression of the subject, caused by the expected explosion of the powder, or the closed eyes which are characteristic of pictures secured by flash lights that are not practically instantaneous.

It follows that a flash must do its work "quicker than a wink," and that it must be ignited by some device other than a fuse or strip of paper, either of which give warning and thus put the subject on his guard. Flash-light lamps are undoubtedly good, but so far as the writer is aware, they are all limited in certain ways. In the first place it is necessary to compress a bulb to force air through a greater or less length of tube. This requires some effort on the part of the operator, and practically prohibits him from including himself among his subjects. If he does attempt to do this, the rubber tube leading from the bulb to the lamp must necessarily form an unsightly addition to the picture; and furthermore, the tube is limited as to its length on account of the air friction which so reduces the blast in a tube of considerable length as to entirely defeat the operation of the light. After enumer-

ating these objections to the ordinary flash-light lamp it is perhaps unnecessary to allude to the matter of expense. However, the lamps range in price from \$1.50 upward.



FIG. 1.—SIMPLE FLASH LIGHT.

In figures 1 and 2 is shown flash-light apparatus, the cost of which is practically nothing, as the needed materials may be purchased for a few cents, and the labor involved is a matter of only a few minutes. A description is hardly necessary, the engravings tell the whole story.

Two loops soldered to the bottom of a small tin pan receive a wire which is bent at one end, forming a spiral, into which is inserted a little roll of asbestos. A fish-line sinker is placed on the wire previous to bending, and near the pan the wire is bent to form a shoulder, which holds the wire in a stable position when raised as shown in figure 1. The other extremity of the wire is bent at nearly a right angle and formed into a loop, then returned to form a practically T-shaped arm with an open eye at its extremity. A stout black thread of sufficient length to reach as far as may be required is tied in the loop.

At the point in the surface of the pan, where the asbestos strikes when pulled over, a shallow cavity is formed by burnishing the tin with a rounded instrument like a tool handle, the tin being placed over a cup, a box cover, or something of that kind which will support the metal around the cavity during the operation of burnishing.

The pan is secured to a heavy wooden block or to any fixed support by means of two or three tacks driven through its rim. One or two boxes of

Blitz-pulver should be placed in the cavity in the tin, a few drops of alcohol are poured on the asbestos, the apparatus is placed on a step-ladder or other high support, which is located at the side of the camera, in such a position as to prevent the light of the flash from entering the camera tube. A large piece of white paper is suspended at the back of the apparatus, and from 18 to 24 inches distant. If the operator is not included among the subjects, the black thread is simply connected with the lower loop, so that a rearward pull of the thread will tilt the wire arm forward. If the operator desires to include himself in the picture, the thread is slipped into the eye at the end of the wire, so that pulling the thread from the front will tilt the wire arm forward. Now everything being ready, the alcohol is lit, the operator takes his position, pulls the thread, and the thing is done.

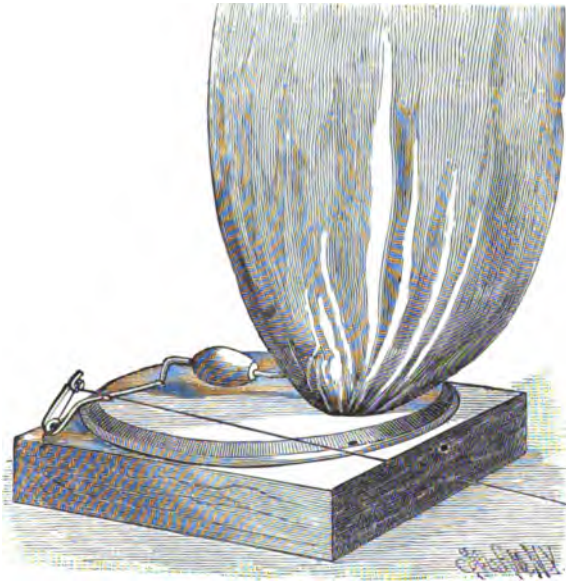


FIG. 2.—THE FLASH.

When the subjects are so posed with reference to the source of light as to produce undesirable dark shadows, this trouble may be avoided by arranging newspapers so as to reflect more or less light on the shaded side.

To secure good flash-light pictures, two things in addition to a good instrument are required; one is an instantaneous light of sufficient intensity, the other is an instantaneous plate of the kind known as Isochromatic or Orthochromatic.

Among the items of expense in the list of the amateur photographer's supplies will be found trays for developing, fixing, intensifying, toning, etc., and the temptation is often great to make one or two trays answer all pur-

poses, but modern photography forbids the double use of trays, so that the operator must either purchase or make trays for himself. In figure 3 is seen, in the upper figure, a pasteboard blank, which, when creased as indicated by the dotted lines, bent up and fastened at the corners by pieces of cloth

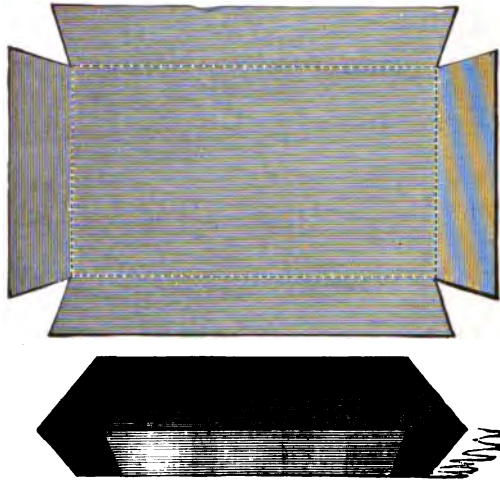


FIG. 3.—INEXPENSIVE TRAY.

glued inside and outside as shown, forms a foundation for a serviceable tray. All that is required to complete the job is to fill the pores of the pasteboard and cloth with paraffine.

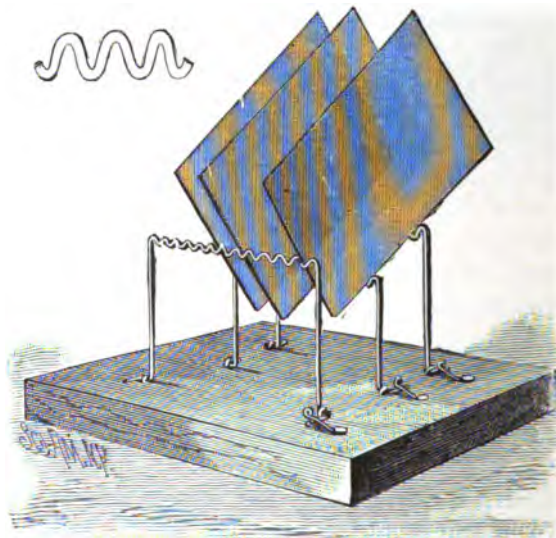


FIG. 4.—PLATE RACK.

There are two ways of doing this: One is to dip the tray into paraffine melted in a pan of suitable size, the other way is to melt the paraffine by means of a hot iron and allow it to drop on the pasteboard, afterward spreading it with the hot iron. In either case a liberal supply of paraffine should be left in the corners. Paraffine candles will furnish the material for saturating the tray when paraffine in bulk is not available.

In figure 4 is represented a simple, easily made and efficient negative rack. It consists of thin wire frames pivoted to the base board, and provided with corrugations for receiving the edges of the plates.

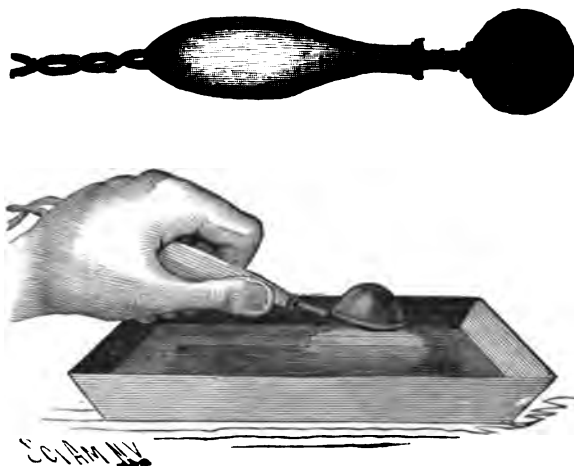


FIG. 5.—ELECTRIC TRAY ILLUMINATOR.

In figure 5 is shown a method of dark-room illumination, which permits of examining the negative thoroughly during the process of development without unduly exposing the plate. It consists of a two-candle power incandescent lamp attached to a handle, and enclosed by a hemispherical reflector closed at the front with a disk of dark ruby glass. The lamp is held near the plate, all of the light is thrown downward so that the eyes receive only the light reflected from the plate. Furthermore, only a small section of the plate is exposed to the light at any time. When the lamp is not in use in the manner described, it is either laid face down on the table, or suspended so as to light the dark-room.

NOTE.—The foregoing article appeared in the *Scientific American*, to whom we return thanks for the use of the illustrations.—Eds.



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EDITORIAL COMMENT.

Close of the Third Volume.—When the ranks of amateur photographers began to increase with such astonishing rapidity, some three years ago, it was said that they had no special representative in the photographic press and the question was asked why should they not be so represented?

We undertook to supply an answer by starting our magazine, believing we would secure the support of all true amateurs and beginners; in this we are pleased to announce we were not mistaken. Our efforts to establish a representative in photographic journalism, free from bias as far as trade interests are concerned, has met with cordial support on every hand, so that now at the close of our third volume we find ourselves in a position to be of greater usefulness to amateurs and others interested in photography, solely as a pleasure and amusement, than ever before. We have aimed to give practical and useful information, especially for those beginning the practice of photography, to further the art side of photography, to publish all the important papers presented before photographic societies, and to give reports of their proceedings. We have made a speciality of illustrating new apparatus, of

reproducing the work of amateurs, and of illustrating sketches of travel by them.

We look for a more extended field in the future and intend to add new features. We ask for continued support on the part of our subscribers and invite them to speak of the magazine to their friends.

Subscriptions Should be Renewed.—At the close of the year the time for renewing subscriptions has arrived; we trust our subscribers will give us the assurance of their support by promptly renewing and thus aid in advancing the good work of a publication devoted to the cause of amateur photography. We have adopted the custom of continuing a subscription until ordered stopped, notifying each subscriber when it expires. In many cases the date of expiration is printed on the wrapper just after the name and address. Subscriptions will be promptly acknowledged. Should any experience delay, we ask that they notify us by a postal card. We call attention to our attractive clubbing list and will give orders for any of these publications prompt attention, asking our subscribers to allow a little extra time for transmitting the order. In some instances a renewal subscription costs more than a new one.

Aid for Dr. R. L. Maddox.—We think very few amateurs are acquainted with the early originators of the Gelatine Bromide Process,—a process so complete to-day as to make the practice of photography nearly universal, extending to every branch of industry. Dr. R. L. Maddox is acknowledged the world over as the first to suggest and practically demonstrate the use of gelatine as a vehicle for holding the sensitive salts and to discover that it aided in increasing their sensitiveness. While many who make important discoveries, retain their secret for personal profit, he freely gave the process to the world, and thereby enabled others to perfect it, until to-day it stands unrivaled, opening fields of work that were thought to be impossible. Vast industries have been built up, and successful manufacturers of dry plates have reaped liberal profits.

Twenty-one years ago Dr. Maddox was in comfortable circumstances having an excellent standing in his profession; he has now reached the age of threescore and ten and has lately been placed in an embarrassing condition, financially, in consequence of a breach of trust by a trustee, now deceased. Besides this he has been troubled with a chronic disease of a painful character, yet it has not prevented him from carrying on his investigations.

No honor is great enough to bestow upon a discoverer who acts so generously in giving his process to the world, and now that the time of necessity has arrived it seems eminently fitting that the photographic public should rise in behalf of the man, and see that his surviving days be pleasant ones. We therefore cordially agree with the rest of our contemporaries in urging upon

all photographers, professional or amateur, to contribute something in aid of this discoverer. He is worthy of it; any subscriptions sent to us for the fund will be at once forwarded to the proper parties. In England one firm of dry plate manufacturers has made the first contribution of \$500. Other sums of \$25 and upwards have been subscribed by professionals and amateurs; a decided interest in the matter is shown. Let our American manufacturers do something handsome. They can afford it. We shall cheerfully publish a list of contributors in our columns. We understand Mr. J. Traill Taylor, of the *British Journal of Photography*, is taking a leading part in promoting the movement, and very appropriate it is, too, since it was in his *Journal* that the process was first published.

Difficulties Attending Classifications at Exhibitions.—We have been among those interested in the conduct of exhibitions of photographs, to advocate the abolishment of all classification except in two or three special cases, such as lantern slides, scientific, or specially technical photographic subjects, thereby leaving the judges unrestricted as to their discretion in the awarding of medals. We think this method, which has now become the usual one in all first-class exhibitions, is the fairest to all concerned, as it leaves the field, so to speak, free from all hampering restrictions and enables the judges to select and make awards for the best work, whether artistic or technical. Another point usually observed is, other things being equal, to award the medal to the party doing the entire work. It seems in the recent Exhibition of Photographs by the Society of Amateur Photographers at the American Institute, the opposite course was pursued, it being announced in the circular, giving a prospectus of the exhibition, that awards would be made in five classes only, viz., Landscapes, Portraits, Marine, Instantaneous Enlargement.

The list of the awards will be found on another page under the head of "Recent Exhibitions."

In addition to the above classes, which were surely what the exhibitors had before them when the exhibits were entered, the judges were permitted to create other classes, apparently for the purpose of getting rid of the extra medals. So two new classes were established when the time for judging began, viz., "Genre" and "Interiors." The former was no doubt deserved, but the latter would have been best left out. One of the exhibitors, whose work was medaled and who has had considerable experience in exhibitions, thus comments on the curious features of the awards: He says: "Mr. L. T. Brush is awarded a medal of excellence for frame 11, 'Enlargements,' when the catalogue distinctly states that the 'negative only was the work of the exhibitor.' He never made the enlargement, only the negative. This, however, is entirely excelled by the strange award of a medal of merit to Mr. Converse for frame 21, also 'Enlargements,' where the catalogue distinctly says: 'Exposure only work of the exhibitor'!!!" He remarks further: "Isn't that drawing the medal scheme into the ridiculous? Are

amateur photographers to be treated like a set of five-year-old kindergarten boys?"

We have learned that the attention of the judges was called to Mr. Converse's pictures and to the fact that he did nothing but press the button, yet they held to their position as to a medal for merit, on the ground that he displayed excellence in choice of subject. The medal, therefore, was for selection of subject rather than in excellence in enlargement. We agree with our correspondent, who did all of his work, that it is hard to tell whether his medal is of any value. He remarks further: "In looking over the prize list and taking my points from the catalogue, I notice that of the twelve awards five exhibitors did *all* the work on their exhibits; five others did *only* the negative work, while the two remaining only pressed the button. This state of affairs ought to be changed and the editor of your influential magazine ought to call attention to these vital questions. There was kicking about the awards at the Joint Exhibition held in New York last May, but these were *ideally* fair compared to those of the last exhibition."

We think he expresses the case pretty clearly; it will always be our aim to encourage greater freedom in judging, that more consistent awards, and no more than is deserved, be made. The best pictures, artistically and technically, are the ones to be medaled, and no others. These points are apt to be overlooked by those not having the highest interest in the art as their uppermost incentive, but who lean rather to personal glorification as the chief aim to be sought after.

Editorial Honors.—Our readers will doubtless be pleased to learn that one of our editors, Miss Catharine W. Barnes, has been called to edit for a short period a column on "Photography for Beginners," in *Frank Leslie's Illustrated Weekly*, and has accepted the position. This will not in any way affect her work in connection with our magazine.

How to Prevent Exposing the Wrong Plate.—A correspondent calls our attention to a method he has adopted of preventing the exposure of the wrong plate in a double plate holder, which is, after the plate holder is filled, to stick a strip of thin gummed paper across the face of one side of the end of the slide and the abutting side of the plate holder. By drawing out the slide the paper strip is broken. In using the same plate holder again, it is easy to see which plate has been unexposed by the unfractured strip. The method involves some trouble, but where a number of pictures are taken rapidly in succession, it supplies a ready means for preventing mistakes, as in such cases one hasn't time to make memorandums after each exposure.

One Way to Mount Prints.

BY C. E. SAWYER.

THINKING, perhaps, my way of mounting prints might be of some help to those who are troubled in getting their prints true on wide-margin cards, I venture to describe it; it is easy and sure.

My prints are mostly 5x8, and for large mounts I use Imperial. I have a strip of card-board, $7\frac{1}{2}$ inches long and $1\frac{1}{8}$ inches wide. This is laid on the top of the mount, leaving an equal space at each end (which is easily measured by a short rule; it will leave about $1\frac{3}{8}$ inches at each end, and where the cards are uniform there is need of measuring only one end), and just even with the top edge, where it is held by a light weight (or, better still, by the good wife, who, by the way, helps a great deal in all my photo work), when the previously-pasted print is laid on the mount, with the top of the print abutting the bottom of the strip of card-board. If the print is trimmed so that it is shorter, it is easily adjusted by leaving an equal part of the strip projecting at each end.

In this way the print can be mounted perfectly true, and, after a little practice, very quickly. Of course this could be used with variations on all sizes of mounts and prints.

Toning and Intensifying by Uranium Salts.

BY CHARLES EHLMANN.

[Presented at the November 10th meeting of the Society of Amateur Photographers of New York.]

THE METHOD to color or to intensify negatives by means of uranic salts is by no means a novelty in photography; it was practiced in the earliest times of the collodion process according to a formula by Selle, who prescribed a solution of 10 gm. ($2\frac{1}{2}$ drachms) each of ferri-cyanide of potassium and uranyl nitrate in 100 cm. ($3\frac{1}{2}$ ounces) of water.

After the collodion process had been superseded by gelatine emulsion plates Dr. Joseph Maria Eder revived Selle's process, modifying it to some extent, and we find it described in detail on page 82 of his book "Modern Dry Plates," translated by Baden-Pritchard in 1881. Soon after its publication T. C. Roche and Charles Ehrmann exhibited uranium intensified positives and negatives before the Association of Operative Photographers in New York, and ever since gelatine positives and negatives, and, later, bromide prints and bromide transfers have been toned or intensified in this manner.

Let us look superficially at the chemical process taking place when toning in this manner, with especial regard to the alleged improvement of it, and the perfect preservation of the whites in the high lights.



PHOTOGRAPHED BY ALFRED STIRGLITZ.

ENGRAVED BY PHOTOCHROME ENGRAVING CO.

“NOVEMBER DAYS.”

Uranyl salts are called red prussiate, and the yellow prussiate, with the silver deposited, the two substances are the same, and a portion of the uranyl is reduced. Then only an action of uranyl with the reduced (the ferrocyanate we desire to obtain (the test longer the silver deposit is, the more concentrated its strength for a

Before reduction takes place, the uranyl nitrate have ample opportunity to form a film. It is one of the properties of or to tan gelatine, a consequence of as well as undecomposed portions of the film that they are not removable, a positive impression therefore employed to prevent it.

But the prints we have seen, which were of perfectly pure whites, without any tinge, are told the addition of acetic acid has been an interesting thing.

The making of uranium-toned prints with pure whites is an American invention, as has been publicly announced. In fact, we find the process described in all newer handbooks. A formula for it appeared first in "Photographic Art," published by Dr. E. Vogel, which is as follows:

Red prussiate solution 2 in 100,	30 c. m. (1 oz. 6 dr.)
Uranyl nitrate solution 1 in 100,	50 c. m. (1 oz. 2 dr.)
Glacial acetic acid,	12 c. m. (3 dr. 10 min.)

How simple the toning is will be at once understood, and I cannot possibly imagine why so much noise has been made about it. We all know the properties of the chemicals we work with—and those that do not ought to. We knew all along of the tanning properties of ferri-cyanide of potassium, and those of acids to soften gelatine or destroy its viscosity. "Photographic and photochemical novelties are floating in the atmosphere, as it were, waiting to be picked up by the first comer," as has been said by an old practitioner, and he is entirely right.

The method of toning and intensifying with uranyl nitrate can be very profitably employed in the making of transparencies, for decorative purposes and for projections. An under-developed gelatine lantern-slide may be intensified with it to perfection, gaining at the same time an agreeable and



PHOTOGRAPHED BY ALFRED STIEGLITZ.

ENGRAVED BY PHOTODUPLICATION.

"NOVEMBER DAYS."

Uranyl salts are not precipitated by ferri-cyanide of potassium, the so-called red prussiate, but forms precipitates with ferro-cyanide of potassium the yellow prussiate. When ferri-cyanide of potassium comes into contact with the silver deposit of either negative or positive, the conditions of the two substances are changed—the ferric salt is reduced to the ferrous state, and a portion of the metallic silver is formed into ferro-cyanide of silver. Then only an action of uranyl nitrate becomes possible, and, in combining with the reduced (the ferro-cyanide of potassium) the reddish-brown precipitate we desire to obtain (the ferro-cyanide uranium) begins to form. The longer the silver deposit is subjected to the action of the solution, and the more concentrated its strength, the more intense in color will be the deposit.

Before reduction takes place, the not yet decomposed ferri-cyanide and the uranyl nitrate have ample opportunity to permeate the soft and porous gelatine film. It is one of the properties of the ferri-cyanide of potassium to harden or to tan gelatine, a consequence of which is that the decomposition products, as well as undecomposed portions of the salt, are so closely enveloped within the film that they are not removable by washing in pure water; the whites of a positive impression therefore remain yellow, notwithstanding all means employed to prevent it.

But the prints we have seen, which were made before us, can justly boast of perfectly pure whites, without any tinge of yellow in the lights, and we are told the addition of acetic acid has wrought this wonderful and very interesting thing.

The making of uranium-toned prints with pure whites is nothing new. It is an American invention, as has been publicly announced, I believe. In fact, we find the process described in all newer handbooks of photography. A formula for it appeared first in "Photographische Mittheilungen," published by Dr. E. Vogel, which is as follows:

Red prussiate solution 2 in 100,	50 c. m. (1 oz. 6 dr.),
Uranyl nitrate solution 1 in 100,	50 c. m. (1 oz. 6 dr.).
Glacial acetic acid,	12 c. m. (3 drachms.).

How simple the toning is will be at once understood, and I cannot possibly imagine why so much noise has been made about it. We all know the properties of the chemicals we work with—and those that do not ought to. We knew all along of the tanning properties of ferri-cyanide of potassium, and those of acids to soften gelatine or destroy its viscosity. "Photographic and photochemical novelties are floating in the atmosphere, as it were, waiting to be picked up by the first comer," as has been said by an old practitioner, and he is entirely right.

The method of toning and intensifying with uranyl nitrate can be very profitably employed in the making of transparencies, for decorative purposes and for projections. An under-developed gelatine lantern-slide may be intensified with it to perfection, gaining at the same time an agreeable and

warmer tone. Failure in lantern-slide making is almost entirely out of the question when we press the red prussiate into our service. Under-developed slides we intensify by the method described, and over-exposed and over-developed plates, subjected to a process which I will describe at some other occasion, may be made into beautifully clear and detailed slides by applying Farmer's solution.

Let us now throw a glance at the process of intensifying negatives with uranyl nitrate—not applicable to all cases of improving feeble negatives but eminently so to some. Under-exposed and under-developed negatives, unfit to print from on account of harshness in some portions and weakness in others, may be made excellent printers with the uranium intensifier so long as the negative is free from fog and perfectly clear in its non-exposed portion. Of course we must dispense in this case with the acetic acid. What is deleterious to the toning of a bromide print becomes here the most important factor. The yellow tone assumed by the clear parts of the negative retards the too forcible printing of the shadows and establishes a harmony between light and shades not attainable with mercurial intensifiers on negatives of the described character. The manipulation requires a little more than ordinary attention, but there is one consolation in case failures occur; the whole uranium deposits can be removed by a weak solution of cyanide of potassium, and after washing the plate a new intensification can be undertaken.

Uranium intensified positives may be rendered blue by immersing the plate in a solution of ferrous sulphate—also a method of considerable age, but deserving the attention of our diligent amateurs for all that.

The Amateur Photographer in Journalism.

BY M. Y. BRACH.

PROGRESSIVENESS in photography is, in a large measure, credited to amateurs, and among the many achievements of this class of picture takers they may well be proud of the impetus which they have given to the illustration of newspapers and periodicals. Ten years ago the extensive illustration of public prints was carried out on a very small scale indeed, as compared with the illustration of these same prints to-day. In the days gone by it was a decidedly expensive matter to obtain pictures of news events. An artist and an engraver were needed to produce even the most ordinary illustration for the press. Among daily or weekly newspapers, picture printing was seldom indulged in. Then came from Europe new processes for preparing press plates direct from photographs. The amateurs saw an opportunity for an increased usefulness for his camera, and he made prompt use of it. Quick acting dry plates made possible the photographing of scenes desirable for a newspaper. And among the first attempts at this

sort of thing was that of an amateur who photographed successfully the finish of a great horse race and had it correctly reproduced in a New York daily paper. Other successful efforts to illustrate news matters caused publishers to prick up their ears and to investigate the possibilities of newspaper illustration. The importance of this branch of journalistic work is demonstrated by the extent to which illustrations have been sought by newspapers. Nearly every paper in the land now prints pictures in one or every issue during the week.

Among the first of the daily papers to print pictures was the *New York Sun*, which, in 1835, printed pictures of the moon, to illustrate what astronomers, then at the Cape of Good Hope, led by Sir John Herschel, were supposed to have seen through a lens weighing something like seven tons. With the aid of a microscope, pictures were supposed to be drawn, portraying people and things on the moon's surface. These fictitious pictures were wood-cuts, drawn in the *Sun* office, and they illustrated the best hoax ever perpetrated on newspaper readers. It is only recently, however, that the zinc etching and half-tone processes have made press plates easily obtainable from photographs, at a cost so low as to place them within reach, even, of publishers of small country weeklies. Celerity in manufacture is another advantage of a zinc etching plate. By this process an average line plate can be prepared for the press in thirty minutes after the photograph is received. The quickest time for half-tone plates of a good grade is several hours.

The amateur photographer enters into this work in the form of the reporter. Given a detective camera, even though never before having taken a picture, and the scribe of average intelligence can secure a sufficiently faithful representation of the scene desired for an interesting illustration. A notable instance of pictorial reporting is found in the *Magazine of American History*, I think it is, where President Harrison, at the time of the Washington Centennial in New York City, was photographed as the central figure of scenes at prominent meeting places, receptions, etc. When he stepped from his carriage to enter St. Paul's Church the snap shot recorded the scene for future generations to look at. And so it was at a dozen other places where the chief magistrate appeared. These photographs were faithfully reproduced in the magazine by the half-tone process and form a valuable collection of historical pictures. It is the enterprise of the amateurs that accomplishes such work as this. It is an enterprise that correctly pictures battles on land and sea; it gives an exact portrayal of a Dakota whirlwind, a flash of lightning, a flying bullet, and the mysteries revealed by the microscope, and helps to make newspapers, magazines, and books of far more attractiveness than they have ever been before in the history of printing.

Live and Learn.

BY CATHARINE WEED BARNES.

(Read before the Chicago Camera Club, October 19, 1891.)

IT WAS with considerable hesitancy that I yielded to the temptation of addressing you to-night. In this case it was a man who offered the temptation and the yielding was justifiable only because photography is in a measure a knowledge of good and evil in which one is apt to receive more than he gives, and, although my interest in the work does not lessen, there do come seasons of faint-heartedness wherein my courage needs renewal by experiencing what a soldier would describe as fighting shoulder to shoulder, the inspiration of meeting with those who have labored and attained success in the same work. I never believed in that sentence, "Better be first in a village than second in Rome." It is always better to have some one just ahead of you. In preparing a paper like this I generally meet two difficulties,—how to accumulate enough information to begin, and then,—where to stop. The farther, it seems to me, one penetrates into the mysteries of photography the more real grows the sense of want of knowledge. It is astonishing how much there is to learn in almost every line of human work when once the eyes are trained to observe, the brain to reason, and the spirit is willing to profit by experience. While there is always danger of knowledge leading to over-weening self-sufficiency or to extreme self-discouragement, so that it takes constant watchfulness to hold the balance even, the sooner one realizes he can never know it all, the better for his chances of improvement.

Almost as serious a danger is the easily acquired want of charity towards the work of others, but, after all, the question comes down to the individual man or woman and it would appear as if one very large rock could be removed from the photographic pathway if workers generally were more willing to accept honest criticism, not ill-natured or jealous fault-finding, but fair, discriminating criticism. At the Buffalo Convention, last July, a well-known professional spoke apologetically of some fault in one of my Elaine pictures and seemed much surprised to have me thank him instead of being offended, saying, "How in the world shall I ever learn if I shut myself off from information?"

Criticism is a kind of mental medicine, often very unpalatable, but, when rightly administered and received, very efficacious. Such suggestions as are to be constantly met with in photographic literature by experienced workers should be useful as a microscope to search out the smallest faults in our work and then we should leave no effort unattempted to correct them. The trouble is that this can be carried so far as almost to destroy all pleasure in one's own work. The habit of criticism becomes so natural and leads one at

times to feel like giving it all up in despair. I know only too well what that feeling is.

I do not think it wise to pin a belief or disbelief as to the value of work on its failure or success at exhibitions. Committees are usually composed of men, and the average man is fallible, very much so, and, however disinterested he may mean to be, it is very difficult to keep on that exalted height. I would recommend to all exhibitors the Chinese proverb, "Expect nothing, and you will never be disappointed." It is a good plan to attend, if possible, exhibitions to which one has sent work, and notice what pictures seem to be favorites with the public; note also in the memory every passing comment and compare your own work with that of others. Cultivate the habit of judging your pictures from the outside, look at them with impersonal eyes, and, above all, do not let yourself fall into the way, and it comes easily, of excusing what you know in your own inner consciousness is not up to a high standard. Because it was hard to get a certain effect and you did not quite succeed does not make your picture worthy of reward. That is not given for trying but for success. If you have done your best, then whichever way the scale turns, in your favor or not, you will have gained something better than medals or diplomas, the knowledge whereof the Scriptures speak in charging men with all their gettings to get understanding.

Pictures often are well liked by the casual observer which, to an experienced camerist are exceedingly poor, technically, but there must be some touch of nature in them which, thus speaking to the heart and not the judgment, is in one sense the highest art. It is never wise, therefore, to utterly ignore the general verdict, and, although you may not coincide in opinion with it, there is no harm in finding out that your judgment is not an infallible *ipse dixit*. With altogether too many amateurs and, indeed, professionals also, the tendency is often to take shelter behind the incontrovertible fact that technicality is not the one supreme good, to justify downright violation of technique, calling absolutely unjustifiable carelessness, great artistic taste, if not positive genius. You cannot find your way through the labyrinth of Art without keeping hold of the guiding thread, technique.

This is more and more evident as one turns from the usual landscapes and marines to those in which the element of life plays an important part, and, most evident of all, in those which are, purely and simply, compositions, where nothing is left to chance and depending for their effect on that most perfectly consummate art which aims to conceal art. Here you are treading on difficult ground. It is very hard to avoid at least partial failure, as even where the accessories are carefully designed and executed, the models may prove unable to grasp the situation and carry out the conception of the artist. This is a serious difficulty to meet, as the slightest failure on the model's part means disappointment, no matter how beautiful the idea in the designer's

brain. Feeling this keenly, I have in two or three instances felt obliged to pose myself (where the subject was sad or pathetic), as, under such circumstances, models seem possessed by an apparently unconquerable impulse to be funny, although it is anything but that to the helpless and long-suffering camerist. Some of my art friends are urging me to use regularly paid models, as painters do, and if I continue illustrative work this seems inevitable. Depending on one's friends, however kind, has its disadvantages. You, especially if a woman, cannot, without risk of giving offense, direct them so unquestioningly as strangers, whose time is yours, and this is often vitally important to ensure success. There is enough mental and nervous strain in carrying on several distinct lines of thought, arranging the *mise-en-scène* of the picture, as a picture, involving, as it does, not merely the posing of the figures, but deciding whether certain fabrics, draperies, furniture, and other accessories will photograph well or are likely to require special treatment, shifting them all back and forth on one's mental stage, making sudden decisions as to lighting and exposure, then, at the last moment feeling obliged to change the lens perhaps, which always necessitates a complete bouleversement of everything, without also feeling obliged to act the part of hostess. If you are playing with photography, very well, that is one thing,—but, if you have a true devotion to Art and a desire to worthily represent her, it is very discouraging to feel obliged to reconcile such conflicting efforts. You are also to a great extent dependent on the social or family arrangements of your sitters, and when several figures are required in one picture must often change the time of sitting more than once to accommodate them all, leading to inconvenience on both sides and often to delay, so that the picture, with all the labor of its preparation, may be eventually an utter failure. Those who undertake illustrative work will live to learn a great deal, more than in any other line, simply because there is more to it. It is practically without limit, and yet you are continually running against obstacles taxing all your ingenuity to remove or transform. It is often possible, however, to convert a serious obstacle into a positive benefit, when there is infinite satisfaction in wringing victory from apparent defeat.

Curiously enough, also, in illustrating any well-known story or poem you will find that people have already formed a decided mental conception of it and will criticise your efforts as inartistic or incorrect simply because their conception of a wholly ideal subject, it may be, differs from yours. Let me cite a case in point. In "Anthony's International Annual" for 1891 appeared an illustration, "Cinderella," which evoked very positive praise and blame, the latter mainly because the figure was not the ragged, dirty, generally disreputable one considered by the critics as correct, and the kitchen "fixings" were not at all poverty-stricken. On the other hand, the designer reasoned that a slovenly Cinderella would not have been in demand as a lady's maid by the elder sisters, that, although employed in the kitchen,

she was evidently more refined than they, and, her work once over, had swept up the hearth and made herself neat and sat down by the ashes to dream of the ball. Also that her father was not a poor man, and her surroundings, though menial, were not those of poverty. So much for two sides of a question.

Experience has taught me that, in selecting subjects for illustration, you must decide, first, whether you wish to please the general public or simply your own self. In the former case it is best to take those which admit of very simple treatment, notably, those including natural scenery or landscapes, which are comparatively little labor to make. This is much easier and considerably less expensive than working to overcome the prejudices of preconceived opinions and you will not be so likely to have the guild of painters look down upon your efforts as trenching on their field, in which they have set up the sign "Keep off the grass." But, if you feel impelled to break a lance in defense of your belief that the royal mantle of Art can cover both photographers and painters, prepare for a long struggle and a hard one unless you will work in the limits indicated by the latter. There is no bigotry so intolerant as much that calls itself liberality. Our mental machinery is so delicately adjusted that a very slight breath can control its movements and many contrary winds are liable to blow upon it. This is shown in the constant discussions on the advisability of amateurs and professionals working together in the same organizations and competitions. If each side was always broad enough to overlook what a politician would call "sectional differences," the course would be eminently wise and helpful to both, but I have come to the conclusion after much conversation with leading professionals and competing at two national conventions that, while there are many really liberal and fair minded men among them, as I have reason to know, a great number will discriminate against the amateur every time, from the mistaken idea that he injures their business. They are the men who stock a dark-room and studio, put out a sign with "artist photographer" on it and then bring discredit upon photography by work to which many an amateur would hesitate about putting his name. The professionals who sincerely believe in photography as an art should, as it is proposed to do with immigration, adopt a policy of restriction. While the commendation of men who have worthily won a high place in the profession is an honor to be desired by all faithful amateurs, one never need be discouraged by the illiberal blame of incompetent workers unless, as in the case of poor Keats, criticism is likely to prove fatal:

"'Who killed John Keats?'"

'I,' said *The Quarterly*,
So savage and tartarly,
'I killed John Keats.'"

I have left but little space to speak of actual work in exposure, development, or printing, but want to say a few words about the dark-room, believing

that development is more vitally essential than generally supposed. Putting aside consideration of different formulæ, let me urge that the lesson be promptly learned of using one developer and, as far as possible, one make of plates; also, if pyro be used, that no effort be made to preserve it in solution, but make it up fresh, one ounce to twelve of water, and prepare the alkali by hydrometer. Use bromide, preferably of potassium, when a restrainer seems demanded, and never, no never, use old developer. Dilute if too strong, remembering that the more water used the softer will be the negative. Then, too, work slowly. Development is like Sam Lawson in Mrs. Stowe's "Old Town Folks; it "will work all right if you give it time, but it can't be druv." I have learned that with proper care the quickest plates need not be fogged even if the room be light enough to read fine print, and it is important to have plenty of graduates, trays, etc. One thing about which I have learned to be especially strenuous is using a clearing bath of saturated alum with a little sulphuric acid, and where reduction is necessary gaining it in a hypo bath. While always making up a normal developer to start with, my custom is to dilute it before actually beginning work, adding the density very gradually. After a certain stage in practical development is reached, the most satisfactory plan is to take a regular course of chemistry with some good teacher and learn the whys and wherefores of what you are doing. It will help to simplify the work by saving useless experiments and add a new zest to all you do by a realization that you are not wasting your time.

This is one reason also why clubs for mutual improvement really do mutually improve the members, for one learns constantly by the exchange of ideas and experiences. This is much better than trying to paddle one's own canoe, as, however needful it is to personally test one's own powers by individual effort, it is necessary to gain both inspiration and sharp experience by association with other workers. If every planet in the heavens started out to manage its affairs on its own individual account, we should hear very little about the celestial harmonies, but the whole planetary system would resolve itself into primeval chaos. Lowell says, "For mankind are one in spirit," and we must be one in mutual helpfulness if we would justify ourselves as claiming place among the real workers of the world.

Photo-Micrography and Bacteria.

THE importance of modern photography, as applied to microscopic objects, is favorably brought out by the following remarks made by Prof. Robert Koch, the eminent bacteriologist, who employs photography with great success to bring out the most minutest parts of organic and inorganic bodies. Professor Koch likens the negative plate to a human eye not blinded by a sharp light nor tired out by long-continued examinations.

"The negative," says Prof. Koch, "frequently shows very fine bodies and parts, which are afterward discovered by the microscope on the object itself, but only after very hard work and under the most favorable conditions regarding light," etc.

Accurate measurement of but faintly visible objects are almost impossible under the microscope, but on the finished negative the task is rendered comparatively easy. The photographic picture of a great many objects is frequently of more importance than the object itself. If I gave to somebody a prepared specimen for viewing certain parts of the same under the microscope, for instance lymph vessels containing bacteries, then I am not certain that the party has found the right spot, and if this is the case I am not positive that he is viewing the part under the same light and conditions as I did. A photograph, however, gives the microscopic picture exactly in the same light, the same enlargement, etc., as I viewed it at the focusing of it.

It is very simple to explain the photograph to a number of persons at the same time, as one can point with the finger to a particular part or measure it with the compass, or compare it with other similar photographs placed alongside of it; in short you can do most anything in order to come to an understanding over a disputed part.

T. G. H.

Preparing Strong Ferrous Oxalate.

By C. W. MILLER.

[Read before the Photographic Society of Philadelphia, November 11, 1891.]

THE strongest form of oxalate developer, made by dissolving ferrous oxalate in potassium oxalate, is not as much used as it deserves to be, the explanation of which, no doubt, is to be found in the very considerable amount of trouble entailed in the ordinary manner of preparing it. Thus two distinct procedures are required: first, the precipitation of the ferrous oxalate; then the solution of it in the alkaline oxalate, which operation is not very satisfactory on account of the tendency to oxalation if heat be applied for any length of time. In trying to find a more convenient plan of getting a saturated developer I hit upon the following, which, I find answers every purpose.

By estimating the quantity of iron, actually in solution in different developers, and further by the point (volumetrically), when precipitation takes place I found that I could not in any way make a developer which should permanently contain over about 0.65 gramme of ferrous oxalate per 10.0 c. c. Acting on this datum I took a saturated solution of potassium oxalate, and to it added an excess of the oxalate, which would be sufficient to convert enough ferrous sulphate to make the 0.65 gramme of ferrous oxalate. The excess of the alkaline oxalate so added was gotten into solution by heat,

when the iron was added. In this manner a developer was produced without excess of anything, except the inert potassium sulphate formed in the reaction.

In comparing a developer so obtained with the strongest form of the ordinary one (say that issued by the Eastman Company, for their bromides), we find that the latter contains for every 10.0 c. c. 0.59 gramme ferrous sulphate, which quantity can only give 0.3 gramme of ferrous oxalate, as against at least, twice that in a saturated developer.

In practice the most convenient way to make up, is to dissolve the full quantity of alkaline oxalate at once in water, so that the formula reads :

Potassium oxalate,	330.0 grammes.
Ferrous sulphate,	135.0 grammes.
Water,	690.0 c. c.

Dissolve the oxalate by acid and heat, then cool until it just begins to be precipitated, then add the crystals of iron at once. After solution has taken place, cool completely as rapidly as possible (I place the containing vessel in cold water) and filter off into closed bottles.

In the above, we have 250.0 grammes of potassium oxalate which remain in solution, while the other 80.0 grammes are lost in forming the oxalate.

The quantity of water necessary to hold 250.0 grammes of potassium oxalates in solution is 760.0 c. c., but we need only take 690.0 c. c., since the 135.0 grammes of ferrous sulphate will furnish 60.0 c. c., the sulphate crystallizing with seven molecules of water.

The oxalate of iron is slowly precipitated after the bottles have stood some time, therefore it is better not to make up a large stock at a time. The formula is calculated to give an excess of ferrous oxalate of 0.15 grammes in each 10.0 c. c., most of which will remain for a short time in solution. The iron and potassium oxalate are balanced.



"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 466.

pyro, causing the reducer to act more forcibly, giving an increased amount of reduced silver, and at the same time softening the film and enabling the reducer to penetrate deeper. Hence an increased amount of alkali means increased rapidity of development. If an excess of alkali be added, the reduction of silver takes place so rapidly as to produce fog. Bromide diminishes the affinity of pyro for oxygen, and hence acts as a restrainer. It also diminishes the liability of the pyro attacking the unaltered bromide of silver, and thus to a certain extent prevents fog. It is not always necessary to use it, for the gelatine itself acts as a restrainer by holding the particles of silver inclosed in a partially impervious coating. The use of sulphite of soda has already been given. Having the developer prepared, all the ingredients of which should be chemically pure, and the water used in making the solutions either distilled, melted ice, or boiled water filtered, retained to cool in a covered vessel, the problem to be solved is to bring forth on the exposed plate a reproduction of the original, preserving all the various tones, and be capable of reproducing in the print the impression made by the original. Do not think that this is an easy matter, or that it can be learned from a book; the knowledge must be acquired by intelligent and hard work over the developing tray. As remarked before, no two plates are identical in these requirements, and therefore for the beginner failures are the rule, success the exception; but patience and a honest endeavor will soon reverse the sum of the result. Avoid the "rapid" plate and cling fast to those called "slow" until the art of development has been fully acquired. Begin with a weak developer, weak in the reducing agent. It can be strengthened as needed. This will give more control over the reducing agent, by which the image is built up, enabling the operator to see and meet the needs of each case. For instantaneous exposures this method is almost absolutely required. For here a strong developer would probably ruin the plate, burying the high lights beneath an opaque deposit of metallic silver, long before any detail was visible in the shadows. Make sure of the details before securing density. The latter is always possible at any stage of development; while, if the proper degree of density is reached before the details are well out, the plate will be lacking in that exquisite gradation of tone which makes the charm of a perfect negative. It is well to keep the developer in constant motion to secure uniformity of action, by renewing the portion in contact with the plate, and at the same time increase the quantity of the oxygen. I know that many operators claim

that finer details are secured by letting the plate remain undisturbed, but I think that they are mistaken. When it is necessary to prolong the development, it is well to place the plate face downward, supporting it by its edges in such a way as to have a fair depth of the solution between the plate and the bottom of the tray. In all cases of developing be not stingy of the developer, but have enough to cover the plate well. With wet collodion plate developed with the protosulphate of iron where the action is rapid, hold the plate in the left hand and pour on as much of the developer as the plate will hold, and allow the development to proceed till completed. The process of development must be continued until the proper amount of density is obtained, and generally until the image is faintly visible at the back of the plate. As seen by transmitted light, the highest lights should be nearly opaque, and the gradations between the shadows, half tones, and the high lights should be distinct and well marked (dry plate). If the latent image flashes up at once under the developer, the exposure has been too long. If, however, the high lights only appear, the half tones hanging back, the exposure has been too short. Fortunately, to some extent these errors can be corrected by certain modifications of the developer. After development the plate should be well washed, either under the tap or in several changes of water, and then cleared (fixed). Under some circumstances it is necessary to place the plate in an alum bath to harden the film and prevent its frilling before clearing. It has lately been recommended to place the plate in a bath of citric acid and water previous to immersing in the hypo. bath, claiming that by so doing a greater clearness is given to the negative and more crispness, together with better prints.

Clearing—The action of the clearing bath is to dissolve out (not to fix) all the silver salts not converted into the metallic state by the developer. Were not this done, and the uncleared plate exposed to the light, "fogging" would at once take place; *i. e.*, the surface of the plate would assume a uniformly dark tint, and all trace of the image be lost. The effect of the clearing bath is to deprive the negative of its milky appearance, due to unreduced silver; and in so doing, when hyposulphite of soda is used, an exceedingly unstable compound hyposulphite of silver and soda is formed, a white substance rapidly decomposing into black sulphide of silver. An excess of hyposulphite of soda present prevents this decomposition. The negative is said to be cleared when it has lost its milky appearance, and a uniform appearance is presented by the

back. Still portions of the double salts may remain undissolved, and it is, therefore, necessary to allow the cleaning agent to act a little longer after the milky appearance has disappeared. Washing must be done thoroughly after removal from the clearing bath, for hypo. clings very tenaciously to the film, especially to gelatine films, and therefore much washing is required to eliminate it. Frequently some hypo. eliminator is required to get rid of the last trace. The washing can be performed in the ordinary trays with running water, but a much longer time is required, for the negative lies on the bottom face up, upon which the heavy hypo. charged liquid rests. Two boxes, the inner one provided with grooves in which to insert the plates, with a perforated bottom with running water, proves very satisfactory. But whatever method is adopted, it is well to test for hypo., which can be done in several ways, as told later on. After sufficient washing, the negative may be placed in a strong alum bath to harden the film, then washed a few minutes and racked away in a place free from dust, to dry.

DEVIATION—Latin *deviatio*, to wander away—In optics a term used to denote the alteration of the course of a ray of light through a highly refracting medium and into a less refracting one, or when it is refracted or reflected from the surface of an object.

DEXTRINE— $C_{12}H_{22}O_{11}$ —Used as a substitute for gum. A very superior article can be prepared as follows: Mix 400 parts of potato starch with 200 parts of water and 5 parts of hydrochloric acid (sp. gr. 1.14) and allow it to dry. This takes about two days. Then heat gently in a water bath for thirty minutes, after which direct heat may be applied and the temperature raised to 230° F. The product is almost completely soluble in water, and possesses great adhesiveness.

DIACTINIC—Any medium through which actinic rays of light can pass are called diactinic. Media which will only allow the non-actinic rays to pass are called *adiactinic*.

DIALYZER—An apparatus proposed by Graham for separating bodies of unequal diffusibility, which process he called *dialysis*. A simple modification of his dialyzer is sometimes used in washing the emulsion, in order to get rid of the unnecessary salts of potash, etc. A round tin box, with a tightly fitting cover, is chosen, the bottom carefully knocked out, and a piece of parchment paper is stretched over one end, and the rim only of the cover is pulled over it to clasp it tightly down. The materials to be dialyzed are placed in the tin, and it is then floated on distilled water. All

substances which will crystallize will pass through the septum of parchment paper, leaving those that will not in the dialyzer. In the case of emulsion the crystallizable salts pass through into the water, and the colloid gelatine holding the sensitive salts remains on the parchment paper.

DIAMETER—Greek *diametros*, *dia*, through; *metros*, a measure—Any right line passing through the center of a figure or body, as a circle, conic section, sphere, cube, etc., and terminated by the opposite boundaries. Also the length of a straight line through the center of an object from side to side, width and thickness, as the diameter of a tree.

DIAPHRAGM—Greek *dia*, through; *phragmmai*, a fence—Literally a fence or partition with an opening in it. The diaphragm is a thin sheet of metal, ebonite wood or cardboard, with an aperture in the center varying in size and placed before, between, or behind the lens to stop or prevent the action of certain rays of light upon the lens, and to neutralize their effect upon the negative, even though they do pass through. Hence they are oftentimes called "stops." By their action they reduce and correct spherical aberration, shutting off the marginal rays, or compelling them to pass through parallel to the axis of the lens, increasing the definition, and by lengthening the pencil of light increase the focal depth, and prevent distortion. For single lenses the diaphragm is usually placed in front of the lens from quarter to one-seventh of the focal length, and in this position it limits the diameter of the pencil of light, and makes them to cross the axis at the aperture of the diaphragm before refraction. Frequently these lenses produce what is commonly known as a "ghost," or flare spot, upon the negative, which is caused by the improper position of the diaphragm, it being either too far from or too near the lens. To obliterate this fault it is generally sufficient to move the position of the diaphragm either way about one-eighth of an inch. The proper position of the diaphragm in all symmetrical doublet lenses is equidistant. Between the two combination unsymmetrical doublet combinations the diaphragm should be in a position proportionate to the foci of the combination. For general use the following maxims should be remembered: A large diaphragm gives a bolder picture than a small one. Focus with the largest aperture, then insert the smaller diaphragm till sharpness is obtained over the whole screen. The smaller the stop the longer the exposure, also the flatter the field of the lens and the greater the depth of focus. The diaphragms should always be numbered with what is termed

their focal value, *i. e.*, by the number which expresses their diameter as the fraction of the equivalent focal length of the lens. This is usually expressed as f/x . To find this number divide the focal length of the lens by the diameter of diaphragm. *E. g.* Focal length of lens $8\frac{1}{2}$ inches, diameter of diaphragm $\frac{1}{4}$ inch; $8\frac{1}{2} \div \frac{1}{4} = 11.3$, number of diaphragm $f/11.3$. The Photographic Society of Great Britain number the diaphragms, however, in a rather different way, taking $f/4$ as the standard, which they call No. 1. This system is called the "Union Standard," or U. S. No., and the U. S. number for any diaphragm marked on the f/x system may be found by the following rule: Divide the focal length of the lens by diameter of diaphragm to f/x , square the result, divide by sixteen, and the result will be the U. S. No. *E. g.* Find U. S. No. of diaphragm marked $f/11.3$; $11.3 \times 11.3 = 127.69 \div 16 = 7.98$, or practically 8 U. S. No. The following table shows at a glance the U. S. No. for all diaphragms:

F.	U. S. No.	F.	U. S. No.	F.	U. S. No.	F.	U. S. No.
1	$\frac{1}{18}$	7.75	3.75	29	52.56	58	210.25
1 $\frac{1}{4}$	.097	8	4.00	30	56.25	59	217.56
1 $\frac{1}{4}$ 14	$\frac{1}{16}$	8.25	4.25	31	60.06	60	225
1.5	.140	8.5	4.51	32	64	61	232.56
1.75	.191	8.75	4.78	33	68.06	62	240.25
2	$\frac{1}{4}$	9	5.06	34	72.25	63	248.06
2.25	.316	9.25	5.34	35	76.56	64	256
2.5	.390	9.5	5.64	36	81.0	65	264.06
2.828	$\frac{1}{2}$	9.75	5.94	37	85.56	66	272.25
2.75	.472	10	6.25	38	90.25	67	280.06
3	.562	11	7.56	39	95.06	68	289
3.25	.660	11.31	8.00	40	100	69	297.56
3.5	.765	12	9.00	41	105.06	70	306.25
3.75	.878	13	10.56	42	110.25	71	315.06
4	1.0	14	12.25	43	115.56	72	324
4.25	1.12	15	14.06	44	121.0	73	333.06
4.5	1.26	16	16	45	126.56	74	342.25
4.75	1.41	17	18.06	45.25	128	75	357.56
5	1.56	18	20.25	46	132.25	76	361
5.25	1.72	19	22.56	47	138.06	77	370.56
5.5	1.89	20	25	48	144	78	380.25
5.656	2	21	27.56	49	150.06	79	390.06
5.75	2.06	22	30.25	50	156.25	80	400
6	2.25	22.62	32	51	162.56	81	410.06
6.25	2.44	23	33.06	52	169	82	420.25
6.5	2.64	24	36	53	175.56	83	430.56
6.75	2.81	25	39.06	54	182.25	84	440
7	3.06	26	42.25	55	189.06		
7.25	3.28	27	45.56	56	196		
7.5	3.51	28	49	57	203.06		

But, unfortunately, the above system of notation apertures or diaphragms, adopted by the Photographic Society of Great Britain,

is an arbitrary one altogether, based upon the hypothesis that chemical changes effected by light are more rapid in proportion as the intensity of the light is greater, and this with so severe mathematical accuracy that a double intensity will reduce the time necessary for exposure by one-half. But this is entirely an *a priori* assumption. It has been adopted, because it seems as if it ought to be so, and not because experiment proved it to be so. I think that a better system could be adopted, one that, by a single glance at the markings on the stop, would convey all the information required by the operator, and not require constant calculation. The natural system, as proposed by Geo. A. Sawyer, seems to come nearer to the wants of the amateur than any heretofore proposed, by its simplicity, etc. (See *Photographic Times*, December 2, 1887.) Lately the iris diaphragm has been reintroduced. I think that it was one of the Harrisons, of New York city, who proposed and introduced this diaphragm into some of his lenses, but he did not live long enough to properly advocate its advantages, and they fell into disuse. It consists of thin, flat tongues of metal fastened to a ring in the lens mount, by means of which the aperture of the diaphragm may be enlarged or diminished by turning the ring backward or forward, causing the tongues to contract or enlarge the opening, the use of which obviates all chance of losing or misplacing the diaphragm, but may increase the chances of flare spots by the friction of the metal tongues wearing off the blackening, and cause the edges to become bright. Revolving diaphragms are also in use, so fastened that, by turning, any aperture may be brought in correct apposition to the center of the lens.

DIFFACTION OR INFLECTION—A modification which light undergoes when it passes the edge of a body, or when it traverses a small aperture. A modification in virtue of which the luminous rays appear to become bent and to penetrate into the shadows.

DIFFUSED LIGHT—Literally light widely spread or poured out. It has been stated that diffused light in a camera, *i.e.*, any actinic light other than that passing direct on to the plate from the lens, is a certain producer of fog. This I think is a mistake. For the image may be lighted by reflection from the sides of the camera and from the surfaces of the lens. The lighter parts of an image, the sky for instance, will reflect diffused light on the inside of the camera, light up the darker places, and thus reduce contrasts. Landscape photographers will tell you that a view with much sky will require a less exposure than one from which the sky is nearly excluded. Given a country residence, with overhanging porticos, illuminated

(To be continued.)

Restrictions on Mailing Photographs from Foreign Countries.

IN THE CAUSE OF ART.—A PETITION TO SECRETARY FOSTER ASKING THAT AN EMBARGO BE REMOVED.

The *New York Times* of recent date prints the following interesting comments: "A petition has been circulated among artists, industrial designers, architects, journalists, littérateurs, and others, to be sent to Secretary of the Treasury Foster in relation to the recent Treasury decision declaring foreign art, photographic and musical publications unmailable, praying that the embargo be removed. The petition is accompanied by a letter from Clarence Cook protesting against the adoption of the measure as one of extreme hardship to art and art schools in this country. Frank Hegger, who has the matter in charge, has had many letters from prominent artists who have signed the petition. These documents will be annexed thereto when the petition is ready to be sent to Washington. In his letter to Mr. Hegger, Mr. Cook says:

"I thank you for giving me an opportunity to sign this protest against the action of the Treasury Department in the matter of importing photographs by mail. I do not know who is to be benefited by this decision of Mr. Foster, but, if I may judge by the wail that goes up from the circle of my acquaintances, there must be many who will be put to great inconvenience by it.

'Speaking for myself alone, I declare that it is a most serious injury to me in my profession as a teacher and writer, and it will be a great hindrance to my pupils, who of late years, encouraged by the facilities with which photographs of pictures and buildings had been procured from Europe, have been making freer and freer use of the privilege now so rudely and unexpectedly snatched from them by the hands of the Government. Some thirty years ago, when I began to teach in schools and to lecture in public on art subjects, I found it extremely difficult to procure copies of the masterpieces of painting and architecture necessary for the illustration of my subject. The high-priced line engravings imported by the dealer were out of the question; the cost of sufficient material of this sort for the illustration for even a single course of lectures would have been too great for the purse of any ordinary lecturer, but beside this they were not what was needed; something more trustworthy than any engraving was required, and very fortunate we deemed ourselves when photography began to supply the wants.

'But in the beginning even photographs were hard to get, and it was not until the Government allowed them to be sent by mail that the world began to go better with us. As we were now able to illustrate our lectures, the interest in the subject grew, the classes were larger, and they increased in number until, from there being but a few of us engaged in this sort of teaching, there has grown up a large and flourishing business, classes and lectures extending over the whole country. This business has been built up almost entirely by the freedom and facility with which the material for illustration has been procurable, with the least delay after its publication abroad and at the least expense. A single photograph could be mailed at the cost of a letter, while the smallest express charge for a parcel from Europe is a dollar. A friend of mine who came back lately from Europe received by the next steamer after his return three photographs for which he had left an order before sailing. The cost of these photographs in Paris was 60 cents, or 3*fr.*, but it cost \$1.50 in addition to get them through the Custom House and express office.

'An American who loves his country, and is proud of it, does not see with indifference what looks, and has for some years looked, like a studied hostility to the tastes and pursuits of students and men of letters. In England, France, Germany, Italy, these men are not only left free as air in their pursuit of happiness, but everything that their Governments can do to enlarge their field of work and encourage them in it is done without stint. Here, on the other hand, in this land of boasted freedom and intelligence, we find fences and ditches in our path at every turn; every smallest privilege has to be fought for and every forward movement is discouraged.' "

[NOTE.—According to the postal treaty, dutiable articles are unmailable. Photographs are dutiable to the extent of 25 per cent. on their value. In our opinion there is no need of

any such duty to protect American photographers, and we shall heartily favor any measure which shall put photographs on the free list. Then, not being dutiable, the annoyances now experienced will be avoided.—EDITORS.]

Since the above was written we have received the following circular, which shows Mr. Cook or some one was able to convince the Secretary of the Treasury of the error of his former decision concerning the seizure of printed matter (photographs included) when imported through the mails:

IMPORTATION OF PRINTED MATTER BY MAIL.

TREASURY DEPARTMENT,

Office of the Secretary,

WASHINGTON, D. C., November 5, 1891.

To Collectors and other Officers of the Customs: Hereafter, all printed matter imported through the mails may be released, at the discretion of collectors and other chief officers of the customs, upon payment of a fine equal to the duties.

Any articles seized as illegal importations through the mails may be released, and the fine remitted, provided such articles shall be remailed to the sender at the expense of the addressee, and in the presence of the customs officer.

Collectors will report such releases weekly to the Department for approval.

Dutiable printed matter addressed beyond the delivery of the Exchange Post-Office, and seized from the mails as illegally imported merchandise, may be released at the discretion of collectors and other chief customs officers, and forwarded to the delivery post-office accompanied with a statement showing the amount of the fine imposed, which shall be equivalent to the duty, to be collected by the postmaster, and remitted in the following manner, as provided in the regulations issued by the Post-Office Department on August 30, 1891, viz.: "Postmasters are instructed to collect the customs duties on such books and packages forwarded to their offices for delivery to addressees, and promptly remit the sum so collected by them to collectors of customs in registered letters, using penalty envelopes and omitting the registration fee," etc.

The form of statement and entry authorized by article 313, General Regulations of 1894, may be used, the words "and entry of books" in the heading being changed to "and entry of printed matter," and the word "duty" in the statement being changed to "fine."

Whenever the duty upon printed matter found in the mails does not amount to fifty cents in any one case, the duty may be remitted as not worth the cost of collection, and such matter may be permitted to go forward in the mail.

Officers of customs will bear in mind that the provisions of this circular are not applicable to importations from countries having special packet-post treaties with the United States. Dutiable importations by mail from such countries are not subject to seizure, but will be delivered on payment of the duties due thereon.

All printed matter relating to lotteries is excluded from the benefits of this circular.

O. L. SPAULDING, *Acting Secretary.*

RECENT EXHIBITIONS.

EXHIBITION OF THE SPRINGFIELD CAMERA CLUB.

We have received a very neat illustrated catalogue of the Fourth Annual Print Exhibition of this club, held at Gill's Art Galleries, November 16th to 21st last. It contains creditable half-tone illustrations of a few of the pictures. Among them are "Mister, Take My Picture," by Hinsdale Smith, Jr.; "A Country Road," by John Leshure; "Old Culver Bridge, Huntington," by Charles C. McElwain. Besides exhibits by members there were others from out of town. The *Springfield Republican* of November 15th thus comments on the exhibition:

"For this year's exhibition a neat illustrated catalogue has been issued as a souvenir, giving much information about the organization. M. D. Fletcher has drawn inspiration

chiefly from Berkshire county and Forest Park, and has managed to catch the spray effects of half a dozen mountain brook cascades with exceptionally fine effect. W. P. Draper has among others a charming picture of "Old Deerfield Street in Summer," and six cards illustrating "Snow Bonnd," as has Hinsdale Smith, Jr. Mr. Smith also has a life-like couple of youngsters, who have sought relief in a retired brook on a summer day, beside such speaking efforts as "The Old Homestead," "Chicopee Meadows," and "In the Meadows." Charles McElwain has several notable pictures, such as "Still Waters," "The Ravages of Time," and "Under the Trees," while Miss Mary Janes has struck an uncommon bit in "Gladys Wants a Ride." Miss Mabel Bullard has several realistic views of the ice-storms of last winter. J. C. Kematar has more than a score of fine pictures taken in the Adirondacks, Isles of Shoals, Old Orchard, and other points. His enlargements will be found of especial interest, particularly the Grass river boat-house among the north woods, on the porch of which several Springfield faces can be distinguished. "The Buckboard Ride" and "Moonlight at the Isles of Shoals" are among his best specimens. John Leshure has a striking picture in "A Shady Lane at Rowe" and pretty bits of scenery about Lanesville, Conn. R. W. Adams has perhaps the best reproductions of the ice-storms, gained from the vantage ground of Crescent Hill, and a score of Kodak snap-shots taken while abroad. Charles W. Shaw's athletic bent is observable in his frequent choice of Hampden Park with its kaleidoscopic events as a subject. Chester W. Bliss has a snowy winter scene and two views at Russell, W. C. Marsh several creditable interiors and exteriors, D. N. Coates a number of aggravating Amabellish views, and M. A. Booth of Longmeadow a panel of photo-micrograph. Ralph W. Ellis has a frame of Duxbury views, aptly styled "In the Footsteps of the Pilgrims." Miss M. Louise Stebbins has half a dozen pictures voicing the fantastic work of the Frost King, also a series of "cute" dega. The Hartford club has sent a dozen pictures, "Under the Lea of a Grassy Bank" being particularly worthy of attention. The Providence club is represented, also the Lowell society, the work of whose members is uncommonly fine. "Getting in Oats" and "Moonlight Effect" are notably fine efforts in this list. The Mystic Camera Club of Medford, the Photographic Society of Waterbury, the Worcester Polytechnic Institute, and the Camera Club of Portland, Me., are also generously represented, the latter society's glimpses of rocky shores and islets being of unusual excellence. A visit to the exhibition is the next best thing to a month's vacation among the most delightful spots in all New England. It was a most successful exhibition. The judges were Albert H. Pitkin, George L. Parmelee, and Elmer M. White of the Hartford Camera Club.

AWARDS AT THE AMERICAN INSTITUTE SOCIETY OF AMATEUR PHOTOGRAPHERS EXHIBITION.

The following awards, consisting of handsome bronze medals, have been made at the exhibition of the Society of Amateur Photographers of New York, now being held at the American Institute Fair. The judges were Messrs. William Kurtz, Frank LaManna, and Henry A. Ferguson,—a professional, an amateur photographer, and an artist. Landscape—Superiority: Frames Nos. 38, 39, 46, 52, 53W, to H. M. Grisdale. Landscape—Excellence: Frame No. 220, to Alfred Stieglitz. Landscape—Merit: Frames Nos. 147, 164, 166, to Hugo S. Mack. Marines—Superiority: Frames Nos. 79, 87, 102, 103, to Charles Wager Hull. Marines—Excellence: Frame No. 188, to Ferdinand Ruppert. Portraits—Superiority: Frame No. 28 B D Z, to Charles H. Davis. Instantaneous—Merit: Frame No. 273 P and Y, to G. W. Wundrum. Enlargements—Superiority: Frame No. 110, to L. H. Laudy. Enlargements—Excellence: Frame No. 11, to Louis T. Brush. Enlargements—Merit: Frame No. 21, to J. S. Converse. Genre—Superiority: Frames Nos. 17 and 18, to Miss Emilie V. Clarkson. Interiors—Excellence: Frame No. 263, to Fred Vilmar. The judges also recommend for honorable mention: Frames 120-139, examples of different methods of sensitizing and toning, upon various papers, Edward Leaming, frame No. 205; A. L. Simpson, frames Nos. 94, 95, 96. Cloud effects: Charles Wager Hull.

T. J. BURTON, Secretary.

EXHIBITION OF PRINTS BY THE NEWARK CAMERA CLUB.

From November 23d to December 5th the club gave an exhibition of prints. We expect to have an account of it in our next issue.

CORRESPONDENCE.

THE BAUSCH & LOMB SHUTTER CONTEST.

To the Editors of the American Amateur Photographer:

Gentlemen, — The prize contest inaugurated by us closed November 1st. The negatives are coming in fast from the different societies, and the average results are very gratifying. It is agreeable to notice the variety of different subjects selected, and the manner in which they are used to bring about artistic effects. In the near future we hope to send a complete list of competing societies, the names of the winners, and the subject that was awarded the prize. As soon as all the negatives are received, the judges appointed by us will decide upon the cash prizes, according to the conditions of the contest.

Yours truly,

BAUSCH & LOMB OPTICAL COMPANY.

Rochester, N. Y., November 23, 1891.

APPEAL FOR PHOTOGRAPHS.—We give below a literal copy of a circular letter, addressed to the secretaries of several photographic societies in this country.

ARTISTISCHE UNION IN BERLIN,

E. K. Müller & Co.

BERLIN W. 56, den 17—7, 1891.

Markgrafenstr. 51.

DEAR SIR:

It is still nearly a commonplace that photography is not able to produce real works of art, proves of esthetic accomplishment and pictorial effect. Although the pictorial and plastic arts often take advantage of the photography, yet they like to adjudicate from it the character of an art, and to rank it among the mere mechanic procedures. They mean, as many people think nowadays, that there is an absolute and unvarying quality in all photographs.

Such judgment overlooks, that by electing the subjects and taking view of them, even by applying optical and chemical means, the personality of the real artist appears, and an individual character is impressed to the photographic picture too.

Photography, understood in this sense, requires, to be sure, as high an artistic intelligence, the overcoming of the same difficulties, as the arts, but it may claim equal appreciation as these.

Our publishing house has charged itself with the task, to promote the esteem of this branch of photography, as far as it can be done by publishing such photographs which, reproducing nature in an artistic manner, represents an idea like a picture.

Now we have the honor of addressing you on purpose, to help us filling our task, by procuring us really accomplished photographs for reproduction; and to give you an account of our undertakings in that direction, we beg to send you the pictures of an amateur of fame, Dr. A. Vianna de Linna.

But, as publishing requires, of course, the greatest extense in all classes of people, we think that photographic societies should give their help for propagating the masterpieces of their fellow artists, and therefore we beg to ask you to promote their promulgation among your friends.

For your library we offer our publications with the exceptional discount of 50 per cent.

Yours very truly,

ARTISTISCHE UNION.



SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

PHOTOGRAPHIC SOCIETY OF KANSAS CITY, Mo.—The regular meeting of the society was held on the evening of October 28th, and was of more than ordinary interest. The attendance was large, all of the officers being at their posts and the machinery well oiled for the occasion. Applications for membership were received and the usual routine of business transacted. During the evening a number of good negatives, made by members under the new studio skylight, were exhibited, and among the number were some excellent studies in lighting and posing made by Messrs. C. H. Clark, L. D. Arnold, and Dr. W. T. Stark. These were examined, criticised, and quite generally discussed in an informal way by the members present.

The secretary reported valuable courtesies at the hands of various photographic publications, especially *THE AMERICAN AMATEUR PHOTOGRAPHER*, *The Eye*, *The Photographic Times*, and *Anthony's Bulletin*, and a resolution was adopted instructing the secretary to write a letter conveying the sincere thanks of the society to the editors of these journals. The thanks of the society were also voted to the Blair Camera Co. of Chicago for valuable favors.

Although the regular business meetings of the society are to be held only once a month, it was voted to have special meetings during the winter on the second Wednesday evening in each month for the reading of papers, exhibition of work, and other entertainments. At the first of these special meetings Mr. G. W. Pearson will read a paper on the application of photography to engineering. As Mr. Pearson is an expert engineer of many years' practical experience as well as an amateur photographer of no little merit, this forthcoming paper will certainly be of a very interesting nature.

During the last meeting a most excellent paper on "Portraiture" was read by Mr. W. H. Perine, who is recognized among the amateurs as authority upon matters photographic. Mr. Perine went into his subject in detail, and handled it in a manner which showed careful study and research as well as practical experience. The paper was listened to with marked attention, and the discussion which followed was general and full.

THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—The regular monthly meeting of this society was held on Tuesday evening, November 10th, President James H. Stebbins, Jr., in the chair. Careful preparations had been made to demonstrate enlarging on bromide paper by electric light, by Mr. G. D. Milburn of Rochester, N. Y.; the apparatus employed being a fac simile of that used at the Eastman establishment at Rochester. In a big dry-goods box about five feet square was suspended the electric arc lamp, access to the latter being had by a large upward sliding door on one side of the box. In the front the condensers and an Eastman enlarging camera, fitted with the largest Darlot lens, were located, while the easel supporting the paper was a short distance away. The negative holder, next to the condenser, is adapted to rotate, enabling the operator to perfectly align the picture on the enlarging screen. Mr. Milburn held that the word "enlarging" was a misnomer; the word "restoring" should be substituted, since all that he intended to do was to restore the reduced picture on the glass plate to the natural size of life. He had a thin but soft 5x7 negative of a lady's head and bust, which he reproduced to life size on a sheet of 18x22 Eastman paper, and demonstrated the method of exposure, which was to give the whole an exposure of twenty-five seconds, then by a card provided with an aperture, intercepted between the lens and the screen to direct the light only on the dense portions of the picture for a minute to a minute and a half, constantly moving the card latterly to prevent the light from acting too long on any one spot. Another point was the method of illuminating the image by raising or lowering the lens at the front, so that the center of illumination would come opposite the densest portion of the negative, while the edge of the lens not so brilliant

would be opposite the weaker parts of the negative. He advised doing this rather than moving the screen up or down. A Scott self-focusing electric arc lamp on an Edison circuit was used, giving a 1,600 candle-power light.

After the exposure was made he proceeded to develop the image in a large wood tray lined with rubber cloth. He recommended a developer made up of six parts of a neutral saturated oxalate of potash solution, to which is added one ounce of a saturated solution of sulphate of iron, slightly acidulated with sulphuric acid, and about thirty drops (15 grains to the ounce) of a bromide of potassium solution. The latter amount varied somewhat according to the exposure and subject.

After wetting the sheet with water, the developer was poured on, and the big tray quickly agitated to ensure an even flowing over the surface of the paper. In a few moments traces of the picture were observed, and soon it appeared in its full strength and richness, a complete well-lighted enlargement. The developer was poured off and a solution of water with a very little acetic acid is added, poured on, which Mr. Milburn explained, dissolved out every particle of the iron solution that may be left in the paper, and prevented the yellowing of the whites. This was poured off, a rinse with plain water then followed, and the sheet was transferred to the hypo or fixing solution (strength one part of hypo sulphite of soda to six of water), and in a few moments the image was fixed, and the lights turned up. In transferring such large sheets, while wet, from one tray to another the practice is to roll it up in a roll from the bottom of the tray, then carry it bodily to the next tray and unroll. The weight of the wet sheet is too great to allow it to be carried by the corners.

Mr. Milburn illustrated how the same enlarging apparatus could be utilized for reducing, as for instance, in the making of lantern slides. The lens is simply carried (by racking out the lens front) further from the negative, and the easel is moved closer to the lens until the size desired is obtained. Then, after focusing, the sensitive plate is held against the face of the easel by two tacks, and the exposure is made. If a negative of great contrasts is employed the details in the denser portions may be brought out by intercepting a card having in it a small aperture, between the lens and plate, and letting the light only impinge on the dense portions. In this way a very even exposure may be given which will make all parts of the transparency develop equally. Mr. Milburn thought this was the only true way to make good lantern slides.

He then exhibited and demonstrated the method approved by the Eastman Company of giving bromide prints a sepia tone. This was done by the nitrate of uranium process. The point to be observed is to see that the hypo is thoroughly eliminated from the print. The solution is made by dissolving ferri-cyanide of potassium 9 grains in water 16 ounces, to which is added after a few minutes glacial acetic acid 5 drachms, and lastly, nitrate of uranium, 8 grains.

The solution should be kept in the dark when not in use, and should be filtered when any precipitate is formed. He had half a dozen dry bromide prints of a cold black color which were wetted and immersed in the toning solution for about five or eight minutes, when they changed to a pleasing sepia color. It was very satisfactory and easy. After the tone is obtained the print is washed in water for twenty-five minutes to free it from the yellow color that is apt to show in the whites.

Quite a discussion ensued as to who first suggested the uranium for toning, and Dr. Charles Ehrmann read a brief paper on the subject (which we give on another page), in which he showed that the Eastman Company were not by any means the first to suggest its use. Mr. Milburn claimed that he was aware the process was an old one, but as the company found it to answer their purpose well, they had adopted it.

Mr. Inglis, Jr., of Chicago, had on exhibition the beautiful set of sepia bromide prints that were shown at the Buffalo convention, and was, he claimed, what started the Eastman Company to get up something similar. But when pressed to tell how it was done he declined to divulge the process, hinting that it was much different from the Eastman formula, requiring at least twelve hours' time to accomplish the same result. Some one asked what good it would do the amateur. His reply was that they could send their negatives to his company and it would manufacture the enlargement. He claimed a patent had been applied for, but was not sure of success. A vote of thanks was passed to Mr. Milburn.

Early in the evening it was the intention of President Stebbins to read a paper on a comparison of recent developers, but he had not had time to prepare it. He still adhered to his favorable opinion of para-amidophenol, and claimed it was four or five times more powerful than eikonogen. One part in 2,000 parts of water was enough to produce development. Dr. Charles Ehrmann stated that he had tried the new developer on lantern slides with much success, and showed two prints from instantaneous exposure negatives developed by it, full of fine detail, made by a friend in Ohio. He had become much interested in what was being said of the new developer in Germany, and had translated a portion of an article in the *Photographic Nachrichten*, written by Dr. F. Stolze, which he was requested by the President to read. It was about as follows:

"Dr. Anderson, the inventor of eikonogen, suggested para-amidophenol as a developer for bromide of silver gelatine emulsion plates; first, for its unusually great energy, and secondly, because of its oxidation products not yellowing the gelatine film, as eikonogen and hydrochinon invariably will do.

"Dr. Stolze, who applied this agent to the development of bromide paper, adopted the formulas of Dr. Anderson, viz.:

- | | |
|--------------------------------------------|-------------|
| (1)—Water, | 32 oz. |
| Hydrochlorate of para-amidophenol, . . | 85 grains. |
| Sodium sulphite, | 1 oz. 5 dr. |
| Potassium carbonate, | 6½ dr. |
| and | |
| (2)—In boiling water, | 3½ oz. |
| dissolve | |
| Potassium metabisulphite, | 1 oz. |
| and | |
| Hydrochlorate of para-amidophenol, | 3 dr. |

and add to the solution, by constantly agitating it, saturated solution of caustic soda, till the precipitation formed is redissolved. The solution is used diluted with from 5 to 50 volumes of water, as exigencies may require.

"In course of experimenting No. 1 was found to be the most rapid developer for bromide prints known. Ferrous-oxalate with the addition of hyposulphite of sodium develops equally quick, but as the whites suffer invariably, it is unfit for bromide paper developing. Rapid hydroquinone solutions attack the paper and injure the gelatine film. No. 1 works so extremely rapid that for very large pictures, requiring especial care and attention, the developer must be much more diluted, with double the quantity of water perhaps, so that the solution would then be in the proportion of 5 in 2,000. If, however, the para-amidophenol is wanted to produce as much detail as ferrous-oxalate does, the proportions of alkali should be increased to from 25 to 30 per cent. But there results a clearness in the whites, brilliancy in the high lights, and velvety blacks in the shadows, never before seen on bromide prints. But, most advantageously, this brilliancy is permanent; it does not vanish when the proof is dry, the cause of which is doubtless the enormous rapidity of the process, in consequence of which the developed image remains upon the surface of the paper and does not sink in, as must necessarily occur when development is restrained.

"With the composition of No. 2 developer a great problem in practical photography has been successfully solved, namely, to compound a developer in highly concentrated form. Diluting the normal solution with fifty times its volume of water we have a developer of the same strength as No. 1. A stock solution of 100 cm. is therefore equal in strength to 5 liters of developer ready for use. If we consider eikonogen, hydroquinone, and especially ferrous-oxalate prussiate but a dilution with equal quantity of water, the developer No. 2 is actually capable to be diluted a hundred times."

Dr. Stolze, he said, illustrates the convenience of using such highly concentrated solution in the printing method with bromide of silver paper. To develop an enlargement of 90x120 cm. he uses about 6 liters of diluted ferrous-oxalate, made by adding 600 c.cm. saturated solution of ferrous-sulphate to 3 liters saturated solution of potassium oxalate and 2.4 liters of water. With para-amidophenol 6 liters of water and 60 c.cm. of stock solution complete

the whole arrangement. While for a number of enlargements of larger dimensions development with iron requires a whole battery of mighty bottles and jars, with para-amidophenol a tiny little stock bottle and the necessary water drawn from the faucet does the business. And what is more, the acid clearing solution after developing is entirely dispensed with.

As far as the durability of para-amidophenol is concerned, Dr. Stolze has kept the ready-made solution mixed with caustic alkali for more than two weeks in a bottle but partly filled. After that time a tiny stratum on top of the solution had colored slightly, not enough, however, to show color in the diluted solution.

At the conclusion of the demonstrations Mr. G. Goetze was invited to exhibit and explain his new Magazine Detective Camera, an illustration of which is here shown.



THE GOETZE MAGAZINE CAMERA.

His idea is to have the camera completely concealed in the form of a box, no part being visible until ready for exposure, then a pin is touched, causing the entire front end of the camera to fall down, throw up the finder, and automatically set the shutter as shown in the illustration. Another pin operates the shutter. In the magazine in the rear are the plates or films, in metal holders pushed forward by a spring to the focal plane. After exposure a key is inserted in the side, something on the Hetherington Camera plan, which, when rotated half way towards the front, causes the exposed plate to fall from a verticle to a horizontal position, in a pile one over the other, to the bottom of the camera. The back portion of the camera slides up to permit the insertion of plates in a bunch, packed in a special case for this purpose. This must be done in the dark-room. There is a device for automatically registering the number of exposed plates, and means for swinging the plate in the focal plane like a swing back. It was very neatly gotten up, and doubtless fulfilled the claims of the inventor, although it was thought that the sudden exposure to view of the lens mechanism would cause the person to be photographed to suspect that it was a camera, more so than with ordinary hand cameras.

It was quite late when the meeting adjourned, owing to the time required to make the demonstrations.

Exhibition of Lantern Slides, November 27th.—The first exhibition of the season of members' work took place on Friday evening, the 27th ult., with Mr. J. Wells Champney at the screen to explain the pictures. Something like one hundred and fifty slides were shown by fourteen different members, from which a selection is to be made for the set to go the rounds of the American Lantern Slide Interchange. Mr. F. Ruppert showed twenty-three slides, illustrating New York, Massachusetts, and foreign scenery, besides two or three interesting figure subjects. He also had some good surf views. Dr. L. H. Laudy contributed six slides of curious microscopic subjects. Mr. H. N. Tieman sent eight slides of city snap-shot views, which were much enjoyed.

Miss C. W. Barnes had seven slides of interiors, figure studies, and New York State scenery that were very much liked, and showed careful work. Six Norway and

Holland views by Miss Elizabeth Slade were extremely interesting. Twenty by Mr. D. K. Young included a variety of subjects, such as New York City views, views of Niagara, Adirondacks, and scenery and inhabitants in North Carolina.

Nine contributed by Mr. C. C. Roumage displayed excellent work, comprising views made on the October outing of Pennsylvania scenery and roads, also of the well-known Washington Bridge, New York. Three by J. Henry Whitehouse of Jewish girls in Tunis, Africa, Jewish man and wife, and of the Palace of the Bey of Tunis, were novel and interesting. Twenty-five by Cornelius Van Brunt, mostly of Central Park and scenery in the Catskills, besides a few interesting city views, were very clear and excellent. Three by Mr. R. L. Bracklow of the statue of "The Minute Man," in Concord, Mass., "The Concord River," and "The start of the Corinthian Yacht Club Regatta" were all good, particularly the last. Seventeen by Mr. William B. Post, of New York City in winter, California scenery, a series illustrating the game of base-ball, and of Japanese subjects were up to his usual careful standard, and were liked by every one; one of clouds and surf at Monterey, California, was as perfect a picture as could be painted.

Thirteen by Mr. E. Warrin, of scenery and subjects in the Island of Jamaica were excellent in every sense of the word. Mr. Champney's single-splash picture of three boys diving into shallow water was full of life, and very amusing. Fourteen by Mr. Alfred Stieglitz of foreign scenery, several figure subjects, and scenes in Venice were all splendidly done. His "Weary" picture, showing a tired peasant girl sleeping upon wood that she had gathered, was especially attractive.

The exhibition began a little earlier than usual, and was carried through without a hitch. To Mr. William M. Murray belongs the credit of so satisfactorily arranging the slides and lists for the occasion.

TOLEDO CAMERA CLUB.—With the closing of the Bausch & Lomb contest, the judging of the negatives, and the awarding of the lens, the Toledo Camera Club made quite a social event of it. Four hundred invitations were issued, and on Friday evening, November 20th, from seven to ten, the rooms of the club were crowded to their utmost capacity. Upon the walls were suspended boards, of various designs, containing prints made with the Clark Prize Lens. At one end of the room was placed a long table, in the center of which was the club slide lantern. Around this was arranged about fifty hand cameras labeled, "Our Battery." At each end of the table was stacked the Tripod Cameras and club apparatus. In the center from the ceiling swung the prize lens and shutter, decorated with blue ribbons. The dark-room, which was lit with red light only, was a continual source of attraction, as well as mystery, especially to the ladies. Freeman's Orchestra rendered music for the evening, and everything went as merry as a marriage bell. About 8.30 the President called the members to order, when W. F. Van Loo delivered the decision of the judges, which was based upon the following understanding of the contest, namely, the best negative of an instantaneous exposure. He stated that their first duty was to determine what was instantaneous by the facts appearing in the negative. The answer given by the Bausch & Lomb Optical Co., to the question, is "anything that shows 'Life' in the negative." The word "Life," from a photographic point, and as here used, means "objects in motion," and the same construction was put on its definition in this contest. The judges complimented the club on the merit displayed in the negatives submitted, and regretted that it was a contest of the lens instead of the operator, and under the above ruling were obliged to lay aside some very fine negatives which lacked the necessary proof of "life." The contest was, therefore, confined to negatives submitted by F. C. Wade, W. A. Martin, and E. L. Griffith, decided in favor of a street scene by F. C. Wade (size 6½ x 8½), said negative being larger, thereby showing greater capacity, equally sharp, and well defined, and of better printing qualities. The judges were: D. L. Stine, W. F. Van Loo, W. E. McKecine. Nine members competed. Forty-two negatives rendered. Although but one year old the Toledo Camera Club has fifty members, and promises to make one of the strong social organizations of the city. From beginning to, end the reception was pronounced by all a most successful one.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.—A stated meeting was held on Wednesday evening, November 11, 1891, with Vice-President Joseph H. Burroughs in the chair. The secretary announced the presentation to the society, by Mr. J. C. Browne, of a copy of

"Reports of Observations of the Total Eclipse of the Sun, August 7, 1869, by Professor J. H. C. Coffin, U. S. N." The board of directors reported the election of Messrs. Frank Bennet and Cyrus Chambers, Jr., as active members of the society. They also announced the death of Mr. Frederick A. Walker. On account of the alteration and improvement to be made in the meeting room, the Annual Honor Picture Exhibition will be postponed until January, and will be held under revised rules shortly to be issued. Mr. Stirling offered a resolution to amend the by-laws, so that section 2, article II. shall read: Active members shall pay the treasury \$10 annually in advance. The fiscal year shall commence on the first of January, but members elected on or before the first of July, shall pay but \$5 for the current year, in addition to the initiation fee.

Mr. Casper Miller read a paper on "Preparing Ferrous-oxalate Developer." (See another page.)

Dr. Mitchell suggested that an addition of ten to twenty-five per cent. of glycerine to the developer would tend to retard oxidization, and it was very often used in developers of that character. Sugar was also used by some for this purpose. There was nothing in glycerine that would at all interfere with any photographic process that the developer might be used for.

Mr. James Wilson exhibited a new shutter for instantaneous or time work. It was copied from an English invention known as the Sargent shutter. It was very compact and could be placed even between combinations of the lens or over the hood. The slide had an up and down motion similar to that of the Newman shutter.

Mr. Earle exhibited several instantaneous views of athletes taken with a hand camera, by Mr. Hemment, of Brooklyn. These he thought were remarkable for the wonderful brilliancy in the shadows and the amount of detail. They were 4x5, taken with a Prosch triple shutter, and for instantaneous work he had never seen them excelled.

Mr. Earle also showed a new mount, intended to take the place of the ordinary card mount with its mat accessory. The specimens exhibited had a mat border with a plain smooth center, on which a buff tint had been printed. They were made by the A. M. Collins' Manufacturing Co., and were adapted particularly for platinotype, or other mat surface prints. The smooth center was produced by severe pressure.

The chairman here announced that the competitive exhibition of lantern slides from hand camera negatives would be given, and appointed Messrs. Pancoast, Browne, and Castner as a committee to judge the slides.

After the exhibition the committee decided that the honors of the occasion were due to set H, by Mr. W. H. Rau, Mexican scenes taken by him, with a Scovill hand camera on glass plates, basing their decision on the difficulty of the subject and the technical quality of the pictures.

The slides selected to represent the society in the American Lantern Slide Interchange for the season of 1891-2 were exhibited, after which the meeting adjourned.

YONKERS PHOTOGRAPHIC CLUB.—The annual meeting of the Yonkers Photographic Club was held at Hawthorne Hall, Monday evening, November 9th. The club has a membership of forty, and is in good financial condition. The officers elected for the ensuing year are: George B. Ritter, President; J. Fowler Trow, Vice-President; Edward T. Sherman, Corresponding Secretary; Robert M. Reeves, Recording Secretary; Gustav G. Schluter, Treasurer. Captain Bragg and George B. Wray, with the officers, comprise the Executive Committee. Mr. Reeves received a vote of thanks for his recent generous donation of books to the club. The following Monday evening John W. Rusk, of New York, lectured before the club on the subject of "Aristotype Paper," and demonstrated its working.

THE AMERICAN LANTERN-SLIDE INTERCHANGE.—On November 30th, the Executive Committee of the Interchange, Messrs. F. C. Beach, W. H. Rau, and Dr. G. Hunter Bartlett, met at the rooms of the Society of Amateur Photographers, 113 West 38th Street, New York, and examined and tested the slides of fifteen clubs, aggregating very nearly 1,400 slides. The manager reported that the Pacific Coast Amateur Photographic Association and the Louisville Camera Club had resigned from the Interchange, the former on account of its disbandment. The Pittsburgh Society had

declined to submit slides for this year. Five new clubs were admitted, the *Joilet Lantern Slide Club*, *Photographic Club of Baltimore City*, *Portland Camera Club*, *Albany Camera Club*, and the *California Camera Club*. The other clubs in the Interchange are the *Society of Amateur Photographers of New York*, *Chicago Lantern Slide Club*, *Photographic Society of Philadelphia*, *Cincinnati Camera Club*, *Newark Camera Club*, *St. Louis Camera Club*, *Syracuse Camera Club*, *Buffalo Camera Club*, *Detroit Lantern Club*, *New Orleans Camera Club*.

Heretofore, a number of the clubs have wished to know the reasons in detail why any of their slides submitted were rejected. The number was great, the committee could only give the reasons in a general answer. This year, however, a code for reasons has been adopted by which the quality of a slide may be readily determined. Each rejected slide is to be marked with a letter, which will indicate the following defects:

- A—Too weak, flat, or over-exposed.
- B—Too dense, chalky, or under-exposed.
- C—Out of focus. Not sharp.
- D—Badly matted, aperture too large, or incorrectly labeled.
- E—Uninteresting subject.

The manager reported to the committee the accession of foreign membership to the Interchange of the Lantern Society of London, England, whose slides have been received and will be retained until the middle of next May, also of the English prize slides of "*Photographer*," and of the London "*Amateur Photographer*" now on their way to this country. A communication had been received from the Berlin (Germany) Photographic Society expressing a desire to join the Interchange. The same society contemplates interchanging slides with clubs in Italy and Austria.

THE AMERICAN PHOTOGRAPHIC CONFERENCE LANTERN-SLIDE INTERCHANGE.—Eight clubs in the conference have voted to enter its Interchange organized last May, which is to begin on December 1st, viz., the Society of Amateur Photographers of New York, Yonkers Camera Club, Brooklyn Academy of Photography, Newark Camera Club, Syracuse Camera Club, Schuylkill Camera Club, Hoboken Camera Club, and California Camera Club.

Mr. Thiery, of the Newark Camera Club, has gotten up an itinerary card directing the movements of the slides. They are to be shipped twice a month.

PHOTOGRAPHIC SECTION AMERICAN INSTITUTE.—At a meeting, held November 10th, a number of lantern slides by Mr. H. J. Newton and Mr. Becker were shown in the electric lantern. Mr. F. J. Harrison exhibited a Thornton & Piekard shutter.

BOOKS AND EXCHANGES.

THE AMERICAN ANNUAL OF PHOTOGRAPHY AND PHOTOGRAPHIC TIMES ALMANAC. 1892. 366 pp. The Scovill & Adams Company, New York. Paper, 50 cents; cloth, \$1.00.

The sixth volume of this well-known and popular book appears more nearly on time than heretofore, and covers information on a great variety of subjects, by many different authors, containing besides seventeen excellent illustrations. Of the latter a flash-light interior, entitled "*Roasting Apples*," is one of the most attractive. Another "*Dere's no mo' work for old Uncle Ned*" is also typical and striking, also another "*Bye-Bye Papa*" is artistic and interesting. We notice seven articles on developers and developing, with a strong endorsement by Dr. L. H. Laudy of the advantages of the hydroquinone and eikonogen developers over pyro. W. K. Burton treats of experiments in timing shutters, illustrated, containing useful information. R. E. M. Bain illustrates and describes a method of making a lantern-scope, and a new photo-micrographic apparatus is illustrated and explained by L. Perrot de Channeux. Mr. O. G. Mason, a veteran photographer, illustrates his camera for enlarging and making positives. Several articles on the hand camera, and its uses also appear. Miss C. W. Barnes describes a method of making lantern slides, that contains sound advice. Alfred Stieglitz and F. C. Beach both refer to the improved kallotype printing process,

explaining its simplicity and possibilities. Stereoscopic photography is advocated by two or three writers. Carbon printing is carefully described by Edward W. Newcomb. Dr. J. J. Higgins illustrates a rapid fixing rack, simply and easily made. But we think the publishers have inserted the cut wrong side up. C. Cramer has an article on "Isochromatic Plates," and Dr. Charles Ehrmann explains how "Chloride of Silver Emulsion Paper" is made, and gives an instructive review of photography for the year. There are the usual valuable recipes, tables, lists of societies, and additional information on the patent postal and copyright laws. There are articles on printing, flash-light photography, and numerous other interesting subjects. It is a book that will be greatly appreciated for the useful and reliable information it contains.

PHOTOGRAPHY APPLIED TO THE MICROSCOPE. By F. W. Mills, with a chapter on Mounting Objects by T. Charters White, M. R. C. S., F. R. M. S. Illustrated, 62 pp., price in cloth, \$1.00. London, Illiffe & Son; New York, E. & H. T. Anthony & Co.

A nicely printed hand-book on a subject that is ever increasing in interest. There are chapters on the Preparation of Microscopical Objects, Microscopical Apparatus, on the Choice of Photo-Micrographic Apparatus, on the Dark-Room and its Fittings, Exposure, Development, and Printing, besides a page devoted to a list of works of reference. The book contains much useful information and should prove valuable to those interested in this branch of the science.

PHOTOGRAPHISCHE OPTIK. Lectures held before the Amateur Photographers' Club in Vienna. By Anton M. Haschek. Printed in German, 74 pp. William Knapp, Halle, A. S., Germany, publisher.

The book contains numerous diagrams and illustrations, and treats the subject clearly and in popular form. It is designed to acquaint amateurs with the different systems of lenses. Besides the lectures it was enlarged by the addition of a chapter on the Selection of Objectives and a chapter on Phototometry.

SCIENTIFIC AMERICAN CYCLOPEDIA OF RECEIPTS, NOTES, AND QUERIES. Munn & Company, New York. 1892, pp. 680. \$5.00.

This great work comprises over 12,000 receipts on every subject of a practical nature connected with the arts, and is a vast repository of technical information. The press-work, paper, and binding are of the best; and the arrangement of the work is admirable, the receipts being all arranged under subjects, which are in turn referred to by hundreds of cross-references. It is not a mere collection of old receipts, but embodies the most recent information on all the subjects treated. The majority of the receipts were obtained from periodical literature, and credit to the different journals is freely given, thus adding immensely to its value. Subjects such as microscopy, photography, etc., have never before been satisfactorily treated in any receipt book. For example take photography. Here are 410 of the latest and best receipts obtainable. Under *developers* we find 77 formulas, 39 for elkonogen, 16 for hydroquinone, besides others for catechol, pyro, ferrous-oxalate, hydroxylamine, and the new para-amidophenol. Several photographic tables add greatly to the value of the work. It is a book which is indispensable to every amateur and photographer, and we can confidently recommend it as the best receipt book published.

NOTE.—Subscribers sending us \$6.00 will receive a copy of the book and one year's subscription to the AMERICAN AMATEUR PHOTOGRAPHER.

RECEIVED OUTING for December. It is full of good things. Flash-light photography has accomplished much useful work. Some of its best-known examples have already been given in *Outing*, and in its December issue W. I. Lincoln Adams finishes his valuable practical advice with two more specimens of flash-light at its best.

THE PHOTO AMERICAN.—At the close of volume II. of the *Photographic Herald* it was decided to give up the title it has so long creditably held, and take part of that of a defunct publication, called "*The Photo American Review*," so that now the former *Herald* is to be known as "*The Photo American*." We think "*The American Photographer*" would sound better. We have received the first number of this new and enlarged magazine, and con-

gratulate the publishers on presenting such a neatly printed affair. In the November number Mr. George G. Rockwood describes "High Lights in Photography," with several half-tone illustrations. It covers 29 pages, and the subscription is \$1.00 per year. Laury McHenry is the editor, and Charles H. Loeber is publisher. We can furnish the *Photo American* and the AMERICAN AMATEUR PHOTOGRAPHER both to one subscriber at \$2.80 per year.

PUBLISHERS' DEPARTMENT.

THE HETHERINGTON MAGAZINE CAMERA.—We learn that at the close of the recent American Institute Fair another medal was awarded to the Hetherington camera for superiority in magazine hand cameras.

United States Photographic Patents

Issued in November, 1891.

November 3d.

- 462,335—Photographic Shutter. F. M. Spaulding, Kalamazoo, Mich.
 462,382—Photographic Printing Machine. D. C. Hoover, Buffalo, N. Y.
 462,459—Magazine Photographic Camera. W. Trueman, Brooklyn, N. Y.
 462,507—Flash-Light for Photography. E. M. Pine, Washington, D. C.
 462,590—Album. G. Schwab, New York, N. Y.
 462,591—Album Leaf. G. Schwab, New York, N. Y.

November 10th.

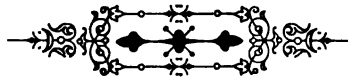
- 462,842—Magazine Photographic Camera. G. H. Hurlburt, Belvidere, Ill
 463,123—Photographic Camera. F. A. Hetherington, Indianapolis, Ind.

November 17th.

- 463,284—Photographic Camera. F. Burrows, Philadelphia, Pa.
 463,557—Photograph Exhibitor. C. G. Soderstrom, Denver, Col.

November 24th.

- 463,630—Enlarging Camera. C. R. Jenne, Fort Wayne, Ind.
 463,705—Carrier or Envelope for Photographic Films or Plates. E. W. Perry, Jr., New York, N. Y.
 463,870—Calcium Light Apparatus. G. R. Prowse, Montreal, Canada.



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It is not our practice to use letters from our customers and friends as a means of selling goods, but as we think the following unsolicited testimonial from a leading Western photographer will be of general interest to the craft, we have obtained Mr. Wise's permission to publish it.

THE BLAIR CAMERA CO.,

GENTLEMEN:

JANESVILLE, Wis., August 1, 1891.

I have used the . . . paper since December last and have tried every new kind that came on the market, so tried yours and consider it the finest by all odds of anything I have used. Have ordered 15 gross Cabinet size, also, some 20 x 24 sheets. If it continues to work in the future as the paper I tried does, it will run the other paper out of the market. It is easier to work than Albumen paper, and the effects are elegant, the beauty of it is they remain after mounting, just as you take them out of toning. I use the Sulpho C. A. bath, but think it a trifle different from your formula. I trust I shall be able to get the paper promptly, but am afraid the demand will be greater than you can supply.

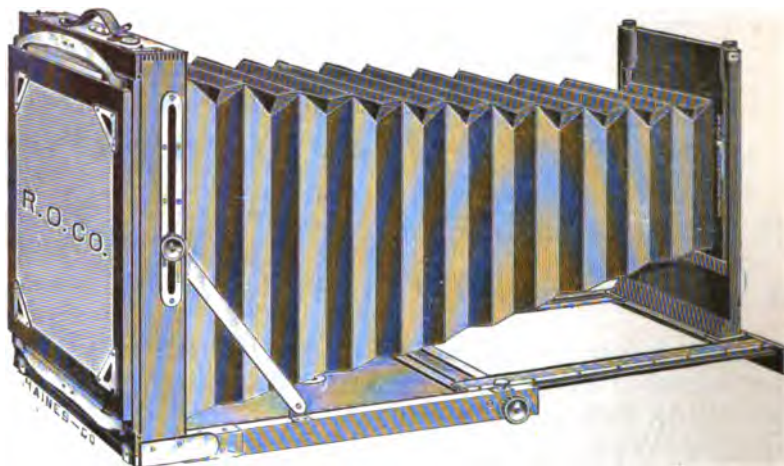
Respectfully,

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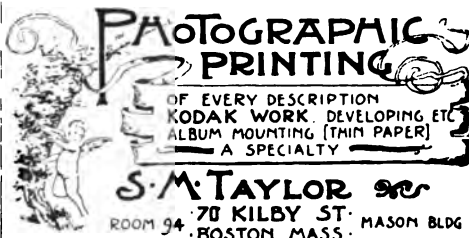
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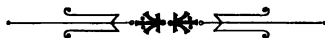


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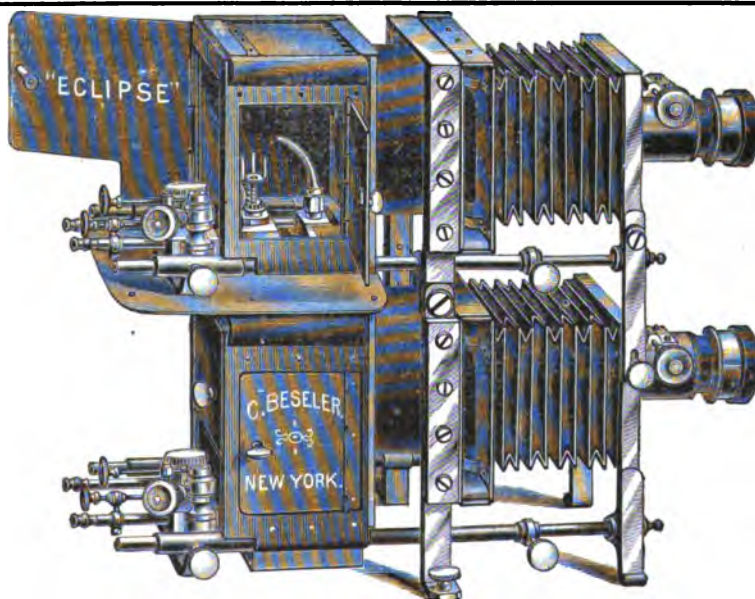


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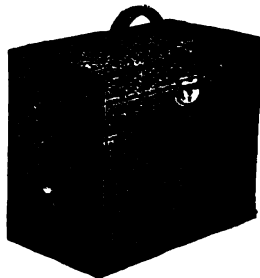
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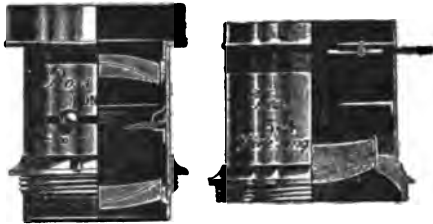
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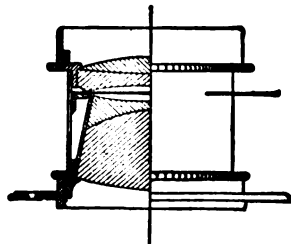
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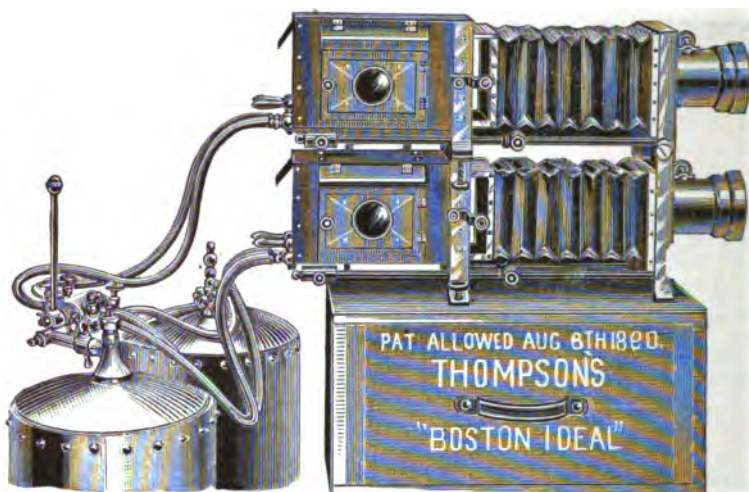
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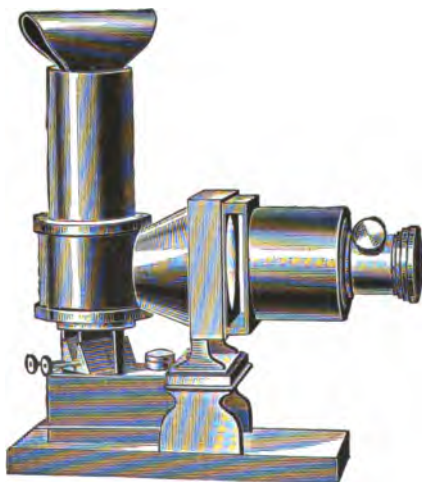
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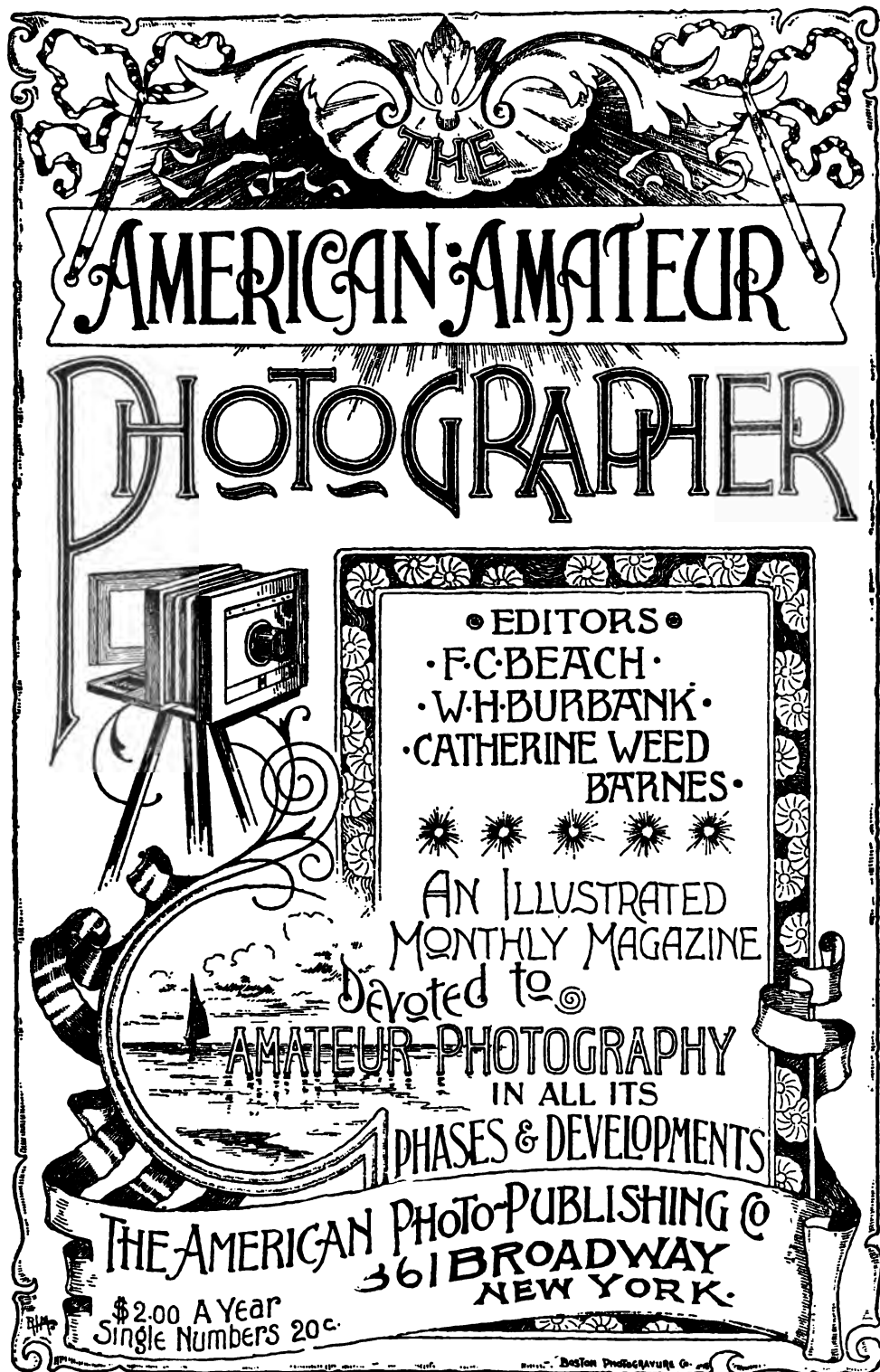
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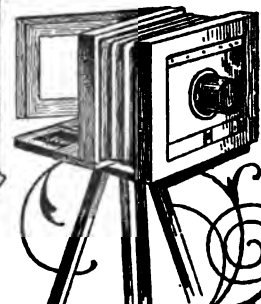
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